# CREATING A DIVERSIFIED COMPANY

SUSTAINABILITY REPORT 2015





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GRI Content Index

IGO Parameters

are summarised in the appendices.

quantitative parameters referred to in this report





# CEO'S MESSAGE

It is my great pleasure to present Independence Group NL's (IGO's) first Sustainability Report.

IGO is intent on building a diversified mining company that delivers superior returns for all of our stakeholders.

Our success is dependent on the support and contributions of our stakeholders, of which there are many. IGO stakeholders include our shareholders, staff and contractors, the government and our regulators, our host communities, our Traditional Owners and the public in general. One way or another, each affects our licence to operate in its broadest sense. Mindful of the importance of these relationships, and the matters of interest to our stakeholders, we have clearly articulated our Vision, Mission and Values to explain how we have conducted, and will continue to conduct, our business.

Among our values, sustainability is our primary focus. We are intent on creating a sustainable business and aspire to conducting our business in a sustainable manner. A key factor to ensuring sustainability is growth, and IGO has grown from humble beginnings. In Western Australia, we now own two mines, Jaguar and Long, and have a 30% ownership interest in a third, the Tropicana Joint Venture, which began gold production in 2013. In September 2015, we completed the acquisition of Sirius Resources NL by way of an Acquisition Scheme of Arrangement. Sirius' primary asset was the Nova Project in Western Australia which is fully permitted, fully funded and in construction. Consequently, in the near term, our efforts will focus on the consistent operational performance of our operating mines, the effective integration of Sirius into our business, and the development of the Nova Project.



In parallel, we will continue to work on our planned exploration projects, which focus on near-mine targets and regional exploration designed to discover the mines of the future.

Going forward, we will continue to consider new growth opportunities targeting gold and base metals projects that have scale, high margin, long-life potential and which are located in low risk mining jurisdictions. In the midterm these opportunities may take the form of further acquisitions while in the longer term we will continue to strive for organic growth through exploration.

In growing our business we intend to create economic benefit, not just for our shareholders, but also for the broader community. Our vision is that our growth serves the communities in which we operate.

Invariably mining and exploration processes have environmental and social impacts. In the face of this reality, we at IGO are committed to understanding these impacts and to working with our stakeholders to find solutions and/or mitigating measures to enable us to respond in ways that meet our stakeholders expectations of our performance. To guide these activities, IGO has embraced the ICMM Sustainable Development Principles.

In the last twelve months we have achieved much. We have consistently delivered financial and production performance within, or better than, guidance and critically, we have done so without serious harm to any of our people.

Further, we have delivered in accordance with our statutory obligations and without material harm to the environment.

Regarding sustainability, IGO's main challenges in the coming three to five years lie in developing improved health, safety, environment, and community relations systems appropriate to the scale of our business and the nature of our role in the broader community.

In this, our first Sustainability Report, we present our key activities and our material impacts, both positive and negative. We have sought to contextualise our activities with regard to the wider industry, the environmental settings in which we operate, and the communities of which we are a part. It is our intention to be transparent in both our objectives and the means by which they are delivered. This report provides a complete overview of the significant non-financial aspects of our business to enable our stakeholders to more broadly assess IGO's performance during the year ended 30 June 2015 and to provide a benchmark against which we can measure our continuous improvement.

I welcome your feedback on this report so that we can continue to improve our performance and strengthen our stakeholder engagement.

### Peter Bradford

Chief Executive Officer and Managing Director



# **ABOUT IGO**

# WHO WE ARE

Established as an Australian gold exploration and mining company in 2000, IGO is now a significant mid-cap mining and exploration company producing gold, nickel, copper, zinc and silver from three mining operations in Western Australia. In September 2015 we acquired the Nova Project, which is now in construction. Nova is of a scale that will be transformational for IGO.

We have grown IGO by expanding our portfolio of gold, nickel, zinc and copper assets, and improving our processes to target shareholder value. Our diversified portfolio gives shareholders exposure to high margin mineral resources and a management team whose overriding goal is business sustainability and increased shareholder value.

Long-term success requires more than world-class assets. It is achieved by highly skilled and motivated people, continuous improvements, uniform processes, high standards of ethical conduct, responsible environmental and safety management, and strong community partnerships. This 'road map' is defined in our Vision, Mission and Values and the IGO Code of Conduct.



### WORKING TOGETHER TO ACHIEVE SHARED GOALS

"We are intent on creating value for our stakeholders in a safe and sustainable way."

Graham Burns Registered Manager Jaguar Operations





### PRODUCING VALUED COMMODITIES

"We produce nickel, copper, zinc, silver, gold in ore and concentrates. Tropicana produces gold. These metals are used in many ways by many people."

Amanda Wilson Mill Trainer **Jaguar Operations** 

# **OUR VISION**

We will be a diversified mining company delivering superior returns for all stakeholders.

# **OUR MISSION**

Our Mission statements are:

- Engaging our people through development of their capabilities, and recognition of the contributions to our future.
- Encouraging innovation to drive efficiency.
- Achieving sustainable growth through high returns from diverse assets.
- Creating a strong sense of purpose by fostering a culture of ownership across the business.



# **OUR VALUES**

We will build an organisation that reflects:



### Sustainability

Putting health and safety first, being environmentally responsible, and supporting our communities.



### Accountability

Taking ownership for what we do and responsibility for others.



### Teamwork

Working together to achieve shared goals.



#### Integrity

Doing what is right and doing what we say we will do.



# Diligence

Careful and persistent effort.



### Respect

Valuing the views of others and accepting people for who they are.



# IGO CODE OF CONDUCT

The IGO Code of Conduct applies to everyone who works for, or on behalf of, IGO. Our Code of Conduct is more than a statement of our expectations; it reflects the values that have served the business well from its inception. It is communicated to all of our people and to those we do business with. Our people, directors and contractors are expected to behave in accordance with this Code.



IGO's Code of Conduct provides guidance on how our values are to be put into practice. The key elements are summarised below:

- IGO is committed to providing a safe, fair, and challenging work environment.
- IGO is committed to enabling a workplace free of harassment, hostility and offensive behaviour.
- We strive for diversity and inclusion in the workplace in terms of gender, age, cultural and ethnic background, religion, sexual orientation and physical ability.
- We work to provide our people with the access to information and knowledge needed to perform well.
- We encourage open and honest expression and facilitate participation.
- We are committed to providing training and development opportunities consistent with the needs of the business.
- We are committed to providing a work environment that protects whistleblowers who, in good faith, report unacceptable conduct.
- We celebrate the success of our business and our people.
- We respect the law and act accordingly.
- We are fair and honest in our dealings.
- We use IGO's property responsibly.

Our people have reciprocal duties to our business and to each other and we expect them to be accountable for both their actions and consequences. We treat each other and our external stakeholders with respect and dignity.

IGO's Code of Conduct is publicly available at IGO's website: www.igo.com.au.



### **GOVERNANCE**

The IGO Board is supported by four committees:

- Remuneration Committee
- Audit Committee
- Sustainability and Risk Committee
- Nomination Committee

Each has a defined charter (refer to the IGO website: www.igo.com.au).

Responsibility for our strategic approach to sustainability lies with IGO's Board and its Leadership Team. The Board's Sustainability and Risk Committee has oversight responsibilities for safety, health, environment, community and risk management.

Sustainability-related initiatives, performance against key performance indicators (KPIs) and issues relating to operations and stakeholders are brought to the attention of the Sustainability and Risk Committee through quarterly meetings.

Responsibility for IGO's business processes and sustainability performance lies with the Managing Director and Chief Executive Officer, Mr Peter Bradford, and IGO's Leadership Team.

The Managing Director and CEO's performance is measured against metrics relating to financial and operational performance, the execution of our growth strategy, and the sustainability of our performance. Comparable and related remuneration arrangements including incentive payments are variously applied to all IGO employees.

All IGO employees are accountable for contributing to the creation of value and enhancing our sustainability within their particular area of responsibility.

For further information on IGO's governance, refer to the 2015 Corporate Governance Statement and the Governance section of the IGO website: www.igo.com.au.

Figure 1 ORGANISATIONAL STRUCTURE



the size of IGO's team



# **APPROACH TO SUSTAINABILITY**

To deliver our Vision, we focus on both the sustainability of our business and the manner in which we do business. By consistently applying our values we are endeavouring to create an organisation that generates superior returns for our investors and improves the socio-economic conditions of the areas in which we operate while eliminating and/or mitigating any negative impacts.

Our starting point is our adherence to the International Council on Mining and Metals (ICMM) Sustainable Development Principles (refer to: www.icmm.com).



### PLANNING FOR SUCCESS

"We want our people to be safe. This is a team effort."

Ted Moir Shift Boss Long Operation



# THE ICMM 10 SUSTAINABLE DEVELOPMENT PRINCIPLES ARE:

- 1. Implement and maintain ethical business practices and sound systems of corporate governance.
- 2. Integrate sustainable development considerations within the corporate decision-making process.
- 3. Uphold fundamental human rights and respect cultures, customs and values in dealings with employees and others who are affected by our activities.
- 4. Implement risk management strategies based on valid data and sound science.
- 5. Seek continual improvement of our health and safety performance.
- 6. Seek continual improvement of our environmental performance.
- 7. Contribute to conservation of biodiversity and integrated approaches to land use planning.
- 8. Facilitate and encourage responsible product design, use, re-use, recycling and disposal of our products.
- 9. Contribute to the social, economic and institutional development of the communities in which we operate.
- 10. Implement effective and transparent engagement, communication and independently verified reporting arrangements with our stakeholders.

### CONTINUAL IMPROVEMENT

Creating a sustainable business takes time. Our focus in the first 15 years of operation has been on the financial and technical performance of our business. While we have been, and continue to be, mindful of our responsibilities regarding social and environmental stewardship, we acknowledge there is much to be done to strengthen our position as a company with an integrated approach to triple-bottom-line considerations. This developmental pathway is illustrated in Figure 2 which shows the overlapping social, environmental and economic aspects of our business and the activities around which we report.

We envisage a four-phase pathway to sustainable development. This pathway will culminate in our organisation embracing full and open accountability for the economic, social and environmental aspects of our business activities while operating within the governance framework of the IGO Code of Conduct.

It is the assessment of IGO's Leadership Team that we are currently positioned between phases 2 and 3 on IGO's pathway to sustainable development. Accordingly, we must not lose sight of our long-term goal to make key business decisions in full consideration of their social, environmental and inter-generational consequences.

To reach this goal, the most challenging tasks lie in managing and measuring our performance within the context of the limits and demands placed on environmental or social resources. Improving the sustainability of our business as a whole requires managing and measuring performance at a business level, within both individual operations and projects, as well as the performance of individual employees and contractors. To this end, IGO uses KPIs relevant to both operations and individuals. These KPIs are frequently reviewed and modified to focus and concentrate efforts on the desired outcomes

## SAFETY CASE STUDY:

## PERSONAL RISK MANAGEMENT TOOLS

Beyond IGO's responsibility to provide a safe place of work and a safe system of work, significant effort is applied to creating a workplace culture in which individuals assume responsibility for their personal safety and that of their workmates.

As a basic first step we want our people to stop and think before they act. We want our people to consider the hazards posed by the task they are about to undertake as well as the hazards posed by their work environment. Whilst this may sound like a obvious ambition, it is in fact a challenge.

People habituate to the 'every day' hazards of a mine site. Given this, the industry as a whole, and as is true for IGO, have put significant effort into educating people about hazard awareness, the simple act of physically stopping prior to acting, and the creation and implementation of Personal Risk Management Tools.

Once such tool is 'Take 5'; a simple pocket sized notebook that contains both space to write down hazards and controls, and a checklist of questions. This type of tool has been used variously in the industry for decades to good effect. However, from time to time it requires a 're-boot'. IGO has commenced such a program to re-introduce 'Take 5' into the organisation.

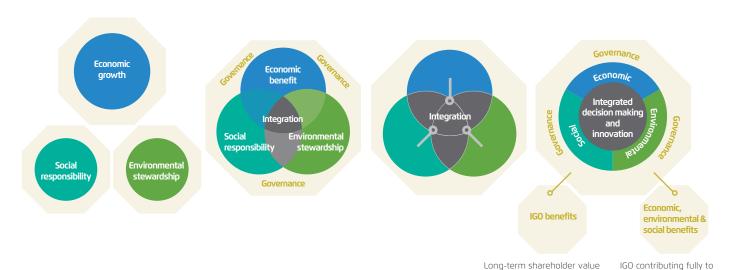


We want our people to consider the hazards posed by the task they are about to undertake as well as the hazards posed by their work environment.



FIGURE 2

IGO'S PATHWAY TO SUSTAINABLE DEVELOPMENT



Phase 1 Phase 2 IGO is here Phase 3 Phase 4

A company in which financial and technical issues predominate.

Governance issues focus on legislative compliance.

Senior management's focus is on minimising liabilities and responding to those external pressures that have the potential to damage company reputation.

A closed culture.

A company whose management starts to view environmental and social aspects as more than just adjuncts to business.

Moving towards the triplebottom-line: accounting for economic, environmental and social factors.

Developing systematic approaches to managing community, environmental. health and safety. Approaches include policies, standards and performance measures.

Emergence of an open and transparent culture, including non-financial public reporting.

A company which has successfully extended triple-bottom-line considerations beyond corporate management into its operational areas.

Licence to operate

A commitment to a sustainable development strategy and continuous disclosure of sustainability performance. Company values and a code of conduct underpin decision making.

Adopting integrated risk management approaches. Setting stretch performance targets to minimise environmental impacts, reduce waste, and strengthen community partnership and trust through engagement and openness.

A company that understands that environmental and social aspects of business underwrite growth in the drive to sustain long-term stakeholder value.

sustainable development

A company which addresses sustainability challenges through innovative solutions and is responsive to changing community expectations.

Environmental and social considerations are fully integrated into day-to-day business decision making.



# ABOUT THIS REPORT

This is IGO's first Sustainability Report. It addresses IGO's sustainability performance for the financial year ending 30 June 2015 (FY2015). This report covers all IGO and related entity activities including the Long nickel mine (known as the Long Operation), Jaguar zinc-copper mine (known as the Jaguar Operation), the pre-production Stockman Project, and our exploration activities. The recently acquired Nova Project is also included.

IGO is a 30% owner of the Tropicana JV. AngloGold Ashanti Australia Pty is the majority owner in this joint venture and manages all aspects of the mine. This report addresses only those limited aspects that are deemed material to IGO and our stakeholders. For additional information refer to AngloGold Ashanti for their assessment of the sustainability of their broader activities

#### (www.anglogoldashanti.com/en/sus).

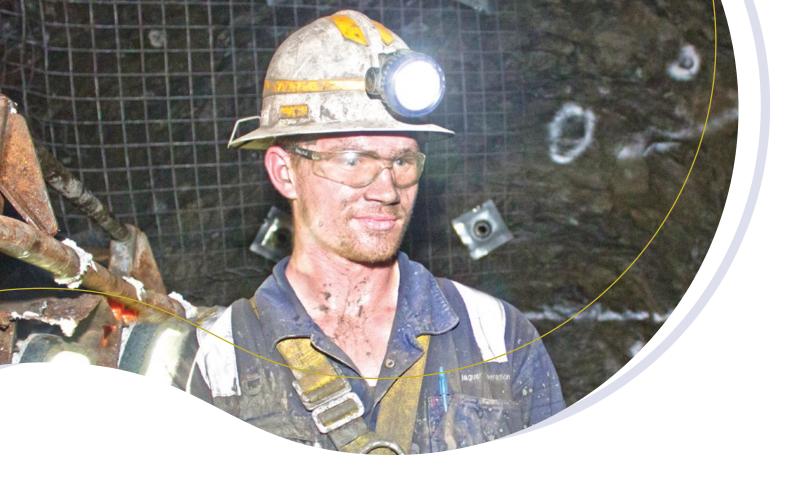
It is IGO's intention to produce an annual Sustainability Report, either independently of, or integrated into, the Annual Report. It is anticipated that the scope and sophistication of our reporting will grow and improve in proportion to the size of our business and with regard to the environment in which we operate. While it is appropriate that our Sustainability Report evolves, it is also our explicit intention to ensure that our performance reporting is sufficiently consistent to enable year on year comparison. The reported information will also be presented in a manner that enables, in so far as is practical, stakeholders to analyse changes in the organisation's performance relative to other organisations.

Our 2015 Sustainability Report has been prepared in general accordance with the Global Reporting Initiative (GRI) G4 Sustainability Reporting Guidelines.

These guidelines have been applied as appropriate to the size of our organisation and the nature and location of our activities. While we have focused on G4 'Core' indicators, we have also included some additional indicators where they refer to a material aspect of our business. We have also reported against some metrics described in the GRI G3.1 Mining and Metals Sector Supplement as they are of interest to our stakeholders. Our methodology in determining what aspects are or are not included in this report is addressed in Stakeholders and Materiality.

To aid the cross-referencing of this report's discussions on IGO's material aspects to elements of the GRI G4 Sustainability Reporting Guidelines, a separate GRI Content Index has been prepared (refer to the Appendix).

This report has not been subject to independent third party review. As our data collection systems mature, it is IGO's intention to progressively introduce a third party review. IGO will gather, record, compile, analyse and disclose information and processes used in the preparation of its sustainability reports in a way that is readily subject to examination and that establishes the quality and materiality of the information. At present IGO completes assurance reporting on our National Pollutant Inventory (NPI) and greenhouse gas (GHG) emissions as part of our submission to the Australian Government's National Greenhouse and Energy Reporting Scheme (NGERS). It is anticipated that IGO's FY2017 Sustainability Report will include a third party review of all quantitative information



# Many hundreds

the number of stakeholders with an interest in our business

# STAKEHOLDERS AND MATERIALITY

This report seeks to address those matters that are material to assessing the sustainability of our performance. We have determined these issues based on a range of considerations. They include both socio-economic and environmental risks and opportunities that potentially have a significant negative or positive impact on our business and our stakeholders.

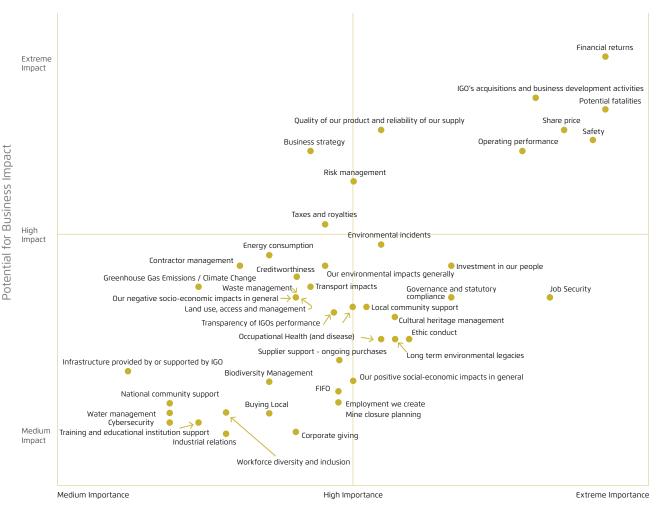
Clearly, central to this assessment are the views of our stakeholders. We have identified our stakeholders and have sought to understand the matters of interest and/or concern to them. This process included reviewing:

- community feedback
- significant events during the year that related to both IGO specifically and the industry in general
- current public IGO commitments and obligations
- analyst and media calls as part of the financial report cycle
- approaches from industry watch groups
- peer company reports, daily media monitoring and workforce feedback
- international sustainability reporting initiatives and sustainability topics raised by key stakeholders, including government and local communities.

The materiality assessment process identified 45 material issues. Following the ranking process, the issues were plotted according to their potential business impact and importance to stakeholders. The IGO Leadership Team and the Board reviewed and approved the ranking of the material issues listed. In turn, this list has informed the structure and content of this report.

It is IGO's assessment that our process for assessing material issues for inclusion in this report was largely in line with ICMM and GRI requirements. However, we have opportunity to improve and this is addressed further in the Social Impacts section of this report.

### RANKING OF TOP 45 MATERIAL ISSUES FOR 2015 SUSTAINABILITY REPORT



Importance to our Range of Stakeholders

# **SAFETY CASE STUDY:**

# ZIP OR ZERO INCIDENT PROCESS - LONG OPERATIONS

Long Operations partnered with Sentis to put all personnel through ZIP (Zero Incident Process) with the intention of reducing the number of workplace injuries. ZIP is a behavioural-based safety training package designed specifically to give participants insight into the way they think. The process encouraged participants to consider how their perceptions, emotions, attitude and values combine to influence their tolerance of risk ensuring their own safety.

The process moved one step beyond other behaviour–based safety training to engage participants in the underlying psychological drivers of

Participants were encouraged to remain mindful about their 'BIG5 '- the five most valuable things in each of their lives.

Participants were taught about the learning process and their capacity to maintain attention. In essence employees were reminded that undue focus on a single activity exposes them to potential hazards that are readily observed given a general mindfulness of one's working environment.



A fundamental part of effectively managing safety is recognising and understanding how we as humans

# STAKEHOLDER ENGAGEMENT

Stakeholder type	Specific stakeholders	Area of interest	Nature of interactions
Shareholder	Retail and institutional shareholders	Share price, dividends, financial returns, governance, risk management, operating performance and business strategy.	Annual General Meeting, Annual and Sustainability reports, ASX announcements, quarterly report and webcast, website (where all releases and other information on IGO is maintained and regularly updated), one-on-one meetings, conference presentations, broker presentations, direct phone contact with investor relations and share registry.
Employees	Both IGO staff and contractor's employees working on site	Job security, employee incentives, industrial relations in general, and FIFO in particular. Safety and occupational health. Investment in our people.	Continuous direct interaction.
Financiers	Various banks	Share price, financial returns, governance, asset management, risk management, operating performance and business strategy.	Regular meetings and interactions with company representatives.
Industry associations	AMEC, AMPLA	Represents industry interests. Industry Promotion.	Participation in meetings and forum.
Traditional Owners	IGO's operations affect the lands of many Traditional Owners. To name a few, these include: Ngadju, Wongatha, Koara, Ngalia, Wutha, Sami	Land use, access and management. Socio-economic impacts and environmental impacts generally. Cultural heritage and biodiversity management.	Engagement with representative bodies, community meetings, and direct in response to public enquiries.
Local communities	Individuals and groups local to our operations, including pastoralists, development groups, local businesses and not-forprofit organisations	Employment, business development, infrastructure, land access, cultural heritage, sponsorship and donations, environmental performance and transparency. Transport impacts. Mine closure planning.	Location-specific community relations' personnel, community meetings, formal and informal communication.
Government and government agencies	Federal and State governments, Local government, State government agencies including the Government of Western Australia Department of Mines and Petroleum (DMP), Department of Environment Regulation (DER) and Environmental Protection Authority (EPA)	Socio-economic impacts (including taxes and royalties) and environmental impacts generally, and specifically FIFO, employment.	Meeting with agency representatives during site inspections and ad hoc meetings.

Stakeholder type	Specific stakeholders	Area of interest	Nature of interactions
Non-government social responsibility and sustainability organisations	A range of organisations have general interest. Specific enquiries have come from CDP.	Monitoring of socio- economic and environmental impacts for the purpose of information sharing, encouraging transparency and in some instances, shareholder advocacy or lobbying. Specific environmental impacts include: waste, water, energy consumption and greenhouse gas emissions. Workforce diversity and inclusion.	Response to enquiries. Response to enquiries.  Regular meetings with organisations to ensure mutual obligation and positive impact on the ground. IGO Board members engage in key stakeholder and community events.
Media	Print, radio, TV and interactive	Financial and operational related queries, ASX announcements, periodical reports and publicly stated business strategy.	Dedicated media relations' function. Regular engagement with business and regional media through six teleconferences per year, regular ad hoc one-onone discussions, interviews, ASX releases, media releases and site visits.
IGO suppliers and contributors	IGO's key suppliers are listed on pages 54 and 55.	Ongoing purchases, or credit worthiness, buying local, contractor management.	Regular meetings and interactions with company representatives.
Institutions	Universities, TAFEs and local schools	Financial and in-kind support. Placement opportunities.	Interactions with institutional representatives and students.
IGO customers	All gold production from the Tropicana JV is sold to the Perth Mint. All nickel ore from the Long Operation Nickel is sold to BHP Billiton Nickel West. Prior to December 2014 most of the concentrate produced by the Jaguar Operation was sold to Glencore and the remainder was sold to MRI Trading AG. From January 2015, all of the concentrate production from Jaguar was sold to MRI.	Quality of product and reliability of supply, financial management of business.	Regular meetings and interactions with company representatives.



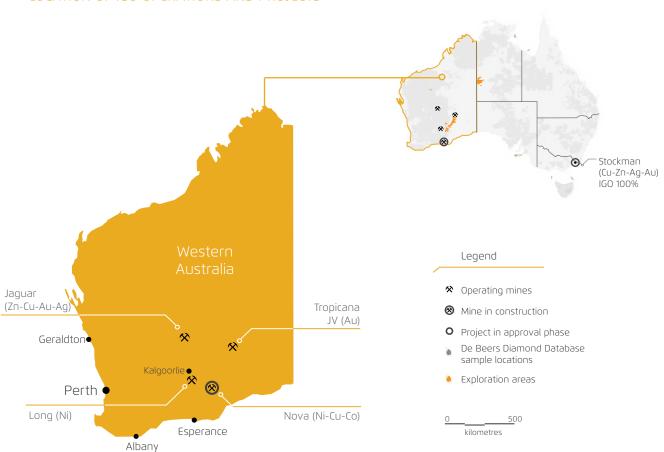
# **ORGANISATIONAL PROFILE**

IGO is an ASX-listed diversified mining and exploration company that is currently producing gold, nickel, copper, zinc and silver from three mining operations in Western Australia.

IGO's gold production comes from its 30% interest in the Tropicana Joint Venture (JV) (AngloGold Ashanti is 70% owner, and manager) in Western Australia. IGO produces nickel from its 100% owned Long Operation in Kambalda in Western Australia and produces copper, zinc and silver from its 100% owned Jaguar Operation 60km north of Leonora in Western Australia.

The structure of our business is presented in Figure 5. IGO inputs and outputs are presented in Figure 6.

FIGURE 4 LOCATION OF IGO OPERATIONS AND PROJECTS





# 1. Exploration

IGO's exploration effort targets both near-mine areas and regionally prospective areas. At present we are exploring near-mine opportunities at both Jaguar and Long Operations. Our key regional exploration joint venture projects are located at Lake MacKay in the Northern Territory, and the Bryah Basin and Salt Creek in Western Australia. We are also exploring in Scandinavia. IGO's exploration is often done in joint venture with other companies.

# 2. Project Development

Project development involves the definition of economically minable resources either as the product of our exploration efforts or through the purchase of prospective ground from other parties. Project development involves a number of key steps including feasibility studies and environmental approvals. Relatively few projects progress through the process from exploration to an operation. IGO's key development project is the Nova Operation near Norseman in Western Australia. At present the mine is being established with the construction of the 'decline' – a road tunnel to the ore body. We are also progressing final permitting of the Stockman Project in Victoria.

# 3. Operations

Operations involve the extraction of ore from the mine and its beneficiation to produce our saleable products; concentrates that contain gold, nickel, zinc and copper. Operations involve ongoing exploration and resource definition, and ongoing mine design and processing optimisation. Our intention is always to extract the maximum economic return on our invested capital whilst operating in accordance with our statutory obligations and our commitments to our stakeholders, IGO also completes mine closure planning and progressive rehabilitation of the new land forms created by our mining activity. At present IGO has two active mines; Jaguar and Long Operations, and is the 30% owner of the Tropicana JV. In the course of managing an operating mine, a key decision lies in either mining the resource to exhaustion or selling the mine to a third party who believe they are better placed to extract further value from the mine.

# 4. Active Closure

As a mine approaches the end of its economic life, mine closure planning is finalised in consultation with our stakeholders. A closure 'basis of design' and 'mine closure criteria' are established. Earthworks are completed to reshape the land forms created by our mining activity to ensure they are both safe, stable and suitable for the intended post-closure land use. This may involve either passive or active revegetation and other activities. Typically infrastructure is demolished and removed except where otherwise approved. At present, IGO has no mines in the this phase.

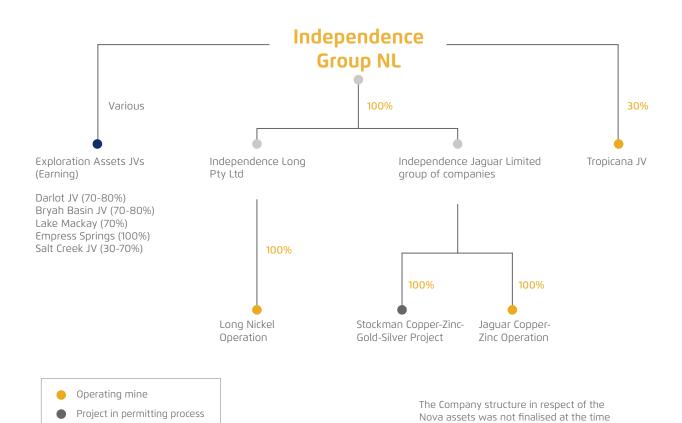
# 5. Passive Closure

Following the completion of closure earthworks, demolition work and revegetation, mine sites are subject to ongoing environmental monitoring to assess their progress against the agreed closure criteria. Typically this includes monitoring of water quality, revegetation, successional processes, and rates of erosion. Passive closure often exceeds a decade. Once IGO believes the closure criteria have been met and subject to the approval of the relevant authorities, the associated land is relinquished back to the state. At present, IGO has no mines in the Passive Closure phase.





FIGURE 5 IGO BUSINESS STRUCTURE



of the report's preparation.

Exploration assets



### **IGO INPUTS AND OUTPUTS**

# Inputs

Labour 148,924 hours Ore mined 743,935 tonnes Electricity 28,690,897 kilowatt hrs 478,929 gigajoules Gas Diesel 4,764,498 litres Ground support 1,074 tonnes 803 tonnes Explosives Cement 7,214 tonnes Reagents - Grinding media 664 tonnes 2,125,294 kilolitres Reagents - Copper sulphate 469 tonnes Lubricants & oils 198,847 litres

### **Emissions**

Carbon dioxide 53,957 CO<sub>2</sub>-e tonnes Carbon monoxide 64,001 kilograms Oxides of nitrogen 154,012 kilograms Sulfur dioxide 169 kilograms Volatile organic compounds 7,563 kilograms Particulate matter (<10 µm) 399,722 kilograms Particulate matter (<2.5µm) 7,299 kilograms

# Products

Ni in ore delivered 10,198 tonnes Cu in ore delivered 723 tonnes Cu in concentrate 7,380 tonnes Zn in concentrate 44,999 tonnes Ag in concentrate 1,876,384 ounces Au in concentrate 4,439 ounces Au in bullion 148,924 ounces



Mining and processing

Products









Recycling

Water Oil Metals Rehabilitation

Newly rehabilitated land 1 hectare



Tailings (Wet tonnes) 2,479,978 tonnes 348,432 tonnes Waste rock Materials to landfill 720 tonnes

These figures do not include inputs and outputs from Tropicana Gold Mine JV, with the exception of gold output which is included. Additional information on IGO's emissions can be found on the National Pollutant Inventory website.

### MANAGEMENT SYSTEMS

The framework for IGO's Management System is based on the well-recognised 'Plan-Do-Check-Act' (PDCA) methodology and the International Organization for Standardization (ISO) guidelines. This methodology includes a component of continuous improvement in all processes so an organisation never reaches a state of 'business as usual', but continues to seek ways to improve.

As our business grows and evolves so too will our Management Systems. At present we are working to develop and implement 19 IGO Common Management System Standards (refer to Figure 7).

This methodology includes a component of continuous improvement in all processes so an organisation never reaches a state of 'business as usual', but continues to seek ways to improve.

### **BUSINESS STRATEGY**

IGO's business strategy is to develop and achieve growth. To this end our focus is to create a leading diversified Australian mining company that delivers superior returns for all stakeholders while maintaining a focus on:

- maximising value from our current asset portfolio
- maintaining capital discipline and retaining a strong balance sheet while pursuing strong free cash flow
- value creative growth, targeting opportunities that have scale, and generating high margins over a long mine life
- our people
- maintaining a social licence to operate.

Delivery on our strategy will provide both growth and long-term sustainability to the organisation with clear value for our stakeholders. The key elements of the strategy to provide long-term stability to the organisation include:

- a diversified commodity mix The diversified commodity portfolio in IGO portfolio provides a insulation against volatility of a single commodity
- a strong balance sheet The strong balance sheet provides optionality for the company and also protection against short-term volatility
- quality assets The Company has a portfolio of quality producing and development assets. The operations are high-margin. Both the Tropicana JV and the anticipated Nova Project are long life of mines, ensuring the sustainability of IGO.

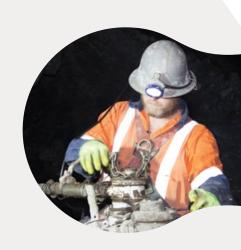
IGO has made significant progress in delivering on the business strategy during FY2015.

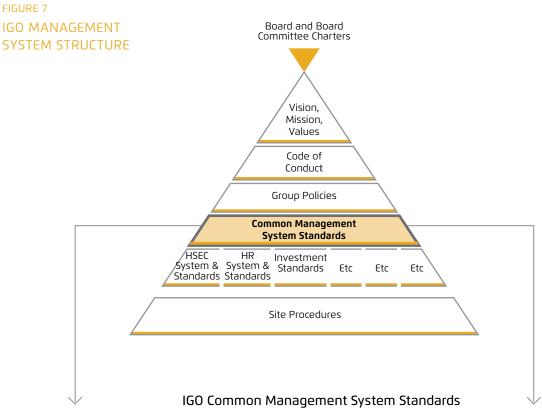
# **SAFETY CASE STUDY:** STUDY DIESEL EMISSIONS

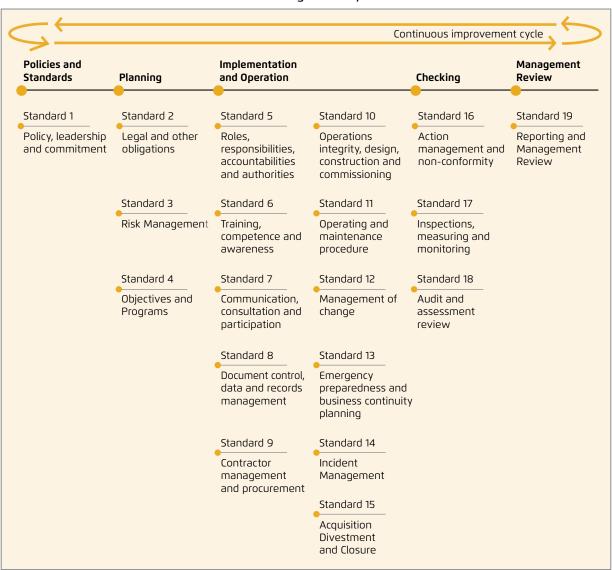
The use of diesel-powered plant in underground mining has steadily increased since the 1960s. During this time, diesel- driven mechanised machinery has largely replaced physical labour or pneumatically driven machines. As a result of the combustion process, diesel engines emit diesel particulate matter (DPM), exhaust gases, including a wide range of organic vapours, and a small amount of metallic compounds. Although it has long been known that diesel emissions pose both short- and longterm risks to health, ranging from mild effects, such as headaches, irritation and nausea, to respiratory disease, in 2012, the International Agency for Research on Cancer (IARC) classified diesel engine exhaust emissions as carcinogenic to humans.

In response to the health risk posed by diesel combustion emission, IGO has engaged in air quality and emission monitoring to establish the significance of the issue at our mines. This monitoring indicated that emission concentrations were below levels of concern

However, as a precautionary measure, in 2013 IGO commenced a program of works to trial diesel emission filters of our heavy mobile equipment at Long Operation. Given the success of these trials, diesel emission filters are being progressively fitted to all of our underground heavy mobile plant. We also continue to trial the use of biodiesel.









# **OPERATIONS**

IGO has two operating mines, Long and Jaguar, and is the 30% owner of a third, the Tropicana Gold Mine.



# ACCOUNTABILITY FOR **OUR RESULTS**

"It's about more than just working hard; its about being accountable for our results and the way these results are achieved."

Vanessa Winter **Graduate Accountant** Long Operation



# 6 Mtpa

ore processed on site

# TROPICANA GOLD MINE JV

The Tropicana JV is managed by AngloGold Ashanti. IGO is a 30% shareholder. While IGO has no direct management of the mine, members of IGO's Leadership Team meet at least quarterly with AngloGold Ashanti's site and corporate management to review both the JV's performance and risk management processes. These reviews address any occupational health and safety (OH&S) issues, environmental management performance, community engagement, and the mine's physical and financial performance.

### LOCATION

The Tropicana Gold Mine is approximately 330km east-north-east of Kalgoorlie and 230km east of Laverton. Tropicana comprises approximately 9,000 square kilometres of tenements that stretch over more than 350km in strike length along the Yilgarn Craton and Fraser Range Mobile Belt Collision Zone. The mine sits within traditional lands variously overseen by the Central Desert Native Title Services, the Goldfields Land and Sea Council, and the Wongatha claimant's North East Independent Body representatives.



#### **BACKGROUND**

IGO targeted and pegged the area containing the current gold reserves in 2001. AngloGold Ashanti entered into a JV with IGO in 2002, and thereafter discovered Tropicana, Havana and Boston Shaker gold deposits in 2005, 2006 and 2010, respectively. The deposits occur over a 5km strike length with gold mineralisation intersected over a vertical depth of 1km beneath the natural surface.

Following Western Australian and Federal Government approvals in early 2011, construction of the 220km access road commenced. This was followed by the development of site infrastructure including an aerodrome, accommodation village, borefields and a processing plant. It is noteworthy that work is ongoing to have the processing plant certified as compliant to the International Cyanide Management Code (www.cyanidecode.org).

Mining of the Havana deposit commenced in 2012. The processing plant was commissioned in late 2013 with the first gold production in September 2013. Post-commissioning, nameplate capacity of 5.8 Mtpa was achieved in March 2014.

The Tropicana operations involve open pit mining of ore and waste rock using conventional blast, excavator and truck bulk mining methods. Gold bearing ore is processed on site at a nominal rate of 6 Mtpa. Processing involves primary and secondary crushers, high-pressure grinding rolls, thickening (followed by cyanide leaching and carbon adsorption), carbon elution and regeneration, tails thickening and disposal, and tailings water recovery.

Tropicana's workforce is entirely fly-in/fly-out (FIFO).

In the 2014 calendar year, AngloGold Ashanti mined 8 Mt of ore and 39.84 Mt of waste rock for 510,967 ounces of gold. IGO's share of the gold production equates to 153,290 ounces.

#### CONSUMABLES

The main consumables at the mine are diesel, lime, cyanide, carbon and water.

An on-site diesel-fuelled power station provides 40 MW installed capacity. APA Group is currently constructing a pipeline from Murrin Murrin to Tropicana to deliver gas. Once complete, the existing diesel generators will be replaced with gas-fired generators and so reduce both cost of operation and the mass of emissions.

Relatively little water enters the pit voids from groundwater seepage or rainfall. Water is supplied by borefields, which are used to extract water from nearby aquifers. In the 2014 calendar year a total of 4,362,473 kL was abstracted from the process water supply bore field plus an additional 532,488 kL which was abstracted from operational bores. At stages during FY2015 the processing facility was constrained due to a lack of water. This occurred because there was a lower than predicted level of water available from existing borefields; a lower than predicted level of water in the open pits; and periods of intensive water usage during construction of the tailing storage facility. Water security has recently been achieved by drilling additional bores. Water from the tailings storage facility is recovered and recycled.

### **WASTE**

The key waste streams from the mine are waste rock and tailings. In addition to the gold bearing ore, waste rock is extracted from the various pits. This rock (predominantly ferrunginous cherts) contains some material that is classified as potentially acid forming (PAF). Such material, if left unmanaged and exposed to the elements, can generate an acidic discharge that can cause downstream impacts on biota and groundwater. Given this, the waste rock dumps have been designed and are being constructed to ensure the PAF material is blended with the neutralising waste rock. This combined material is placed away from what will be the final slopes of the waste rock landform.

Tailings are a thick water-based suspension of fine crushed rock, sand, and clay produced from the processing plant once the gold has been recovered. This waste is pumped to the tailings storage facility, which is designed to allow the tailings to settle and form a 'beach' that drains to a central pond. Ponded tailings liquor is recovered and returned to the processing plant. Tailings are cyclically deposited so the beaches evaporatively dry and enable the dried tailings to be progressively stacked higher. A key environmental consideration in this part of the process is the presence of weak acid dissociable cyanide in the tailings liquor.

The project development has required the clearance of 2,451 ha of natural bush to date. This includes both mining and exploration disturbance but excludes open pit disturbance.

A small volume of both putrescible and hard waste is disposed of in the onsite landfill.

#### **NATIVE TITLE**

The Tropicana Gold Mine is wholly within the area of the former Wongatha Native Title Claim (WC99/001). While this claim was dismissed by the Federal Court in 2007. AngloGold Ashanti continues to work closely with the claimant group and other interested parties.

The most substantive nearby Aboriginal communities are located at Laverton and Cosmo Newberry, both of which are approximately 220km west-north-west of the site; Coonana, which is approximately 225km south-west; and Tjuntjuntjarra, 250km to the east. There are no pastoral land holdings within the project area.

#### LIFE OF MINE

At present the expected life of mine for the mine is eight years, based on current reserves. A mine closure plan has been developed and is updated every three years.

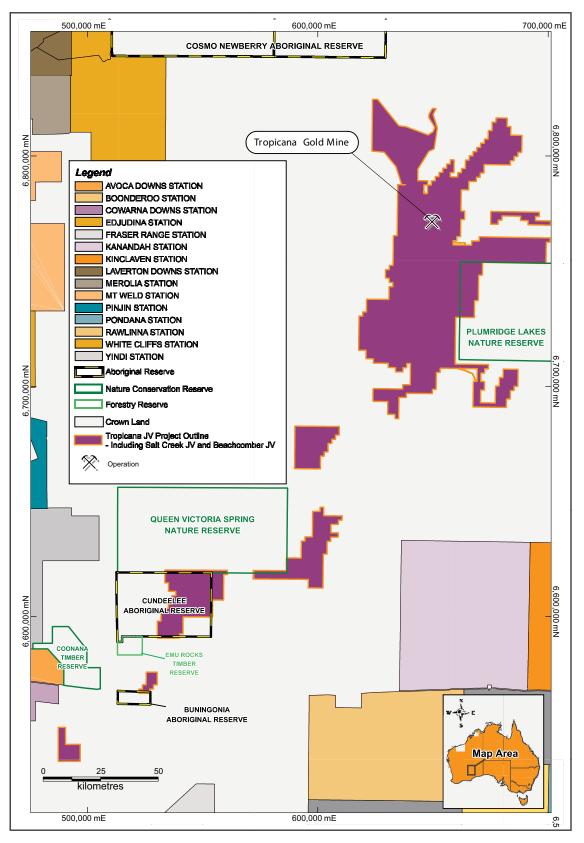


A WA School of Mines graduate (BEng Mining Engineering) with 3.5 years industry experience. Having finishing his degree David started work as an underground truck driver in 2012 and went on to complete his introductory time underground including in a variety of roles like nippering, service crew, charge up, bogging and long hole drilling.

"I like my job not just because this is what I want to do, but because the people I work with really look after each other. As a mining engineer, there are many challenging tasks such as drill and blast design, magazine management, and weekly scheduling to name a few ... it is all a good opportunity to learn."

Yingpeng (David) Wei Mining Engineer Jaguar Operation

FIGURE 8 TROPICANA GOLD MINE





### LONG OPERATION

Since October 2002, the Long Operation has produced over 2 Mt of nickel ore, producing over 100,000 contained nickel metal tonnes. A commitment to brownfields exploration has seen the discovery of the McLeay (2005) and Moran (2008) ore bodies and has enabled the operation to develop a reserve base. The nominal production rate is 9,000 to 10,000 tonnes of contained nickel metal per

The Long Operation is comprised of both freehold land and state mining leases. It sits within a region that has been, and continues to be, subject to extensive exploration, mining and ore processing activities. Our nearest neighbours are other mining operations, which include the BHP Billiton Nickel West Pty Ltd's (BHPB's) concentrator facility and Gold Fields Australia Pty Ltd's St Ives Gold Mine.

One of the noteworthy aspects of the Long Operation is the presence of third party assets on the IGO property (e.g. tailings lines run from BHPB's concentrator facility to the west of the Long Operation to the BHPB tailings storage facilities located to the east of the Long Operation).

Given the long history of the Long Operation, and the proximity and history of surrounding mining activities, the greater area has been heavily impacted by mining activities. Various parts of the property are also subject to impacts caused by other parties.

A discussion of the key environmental impacts is presented in the Environmental impacts section of this report.

# 2 Mt

production from the Long Operation since 2002

#### LOCATION

The Long Operation is located on the shores of Lake Lefroy, approximately 3km east of Kambalda and 50km south-south-east of Kalgoorlie.

The Long Operation comprises approximately 1,381 square kilometres of tenements and sits within the traditional lands of the Ngadju people.

### **BACKGROUND**

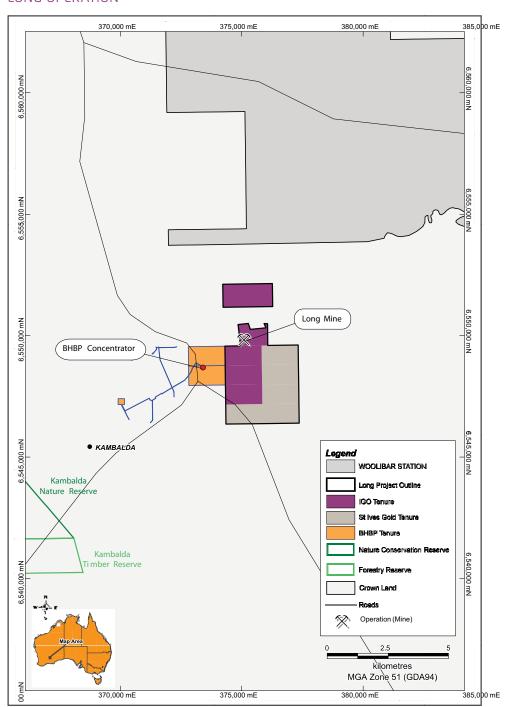
IGO acquired the Long Operation from BHPB's (formerly WMC Resources Ltd) in September 2002. It had been operated by WMC Resources since 1979 before being placed into 'care and maintenance' in early-2000. The mine was re-commissioned in October 2002 and has been operating successfully since.

The workforce is largely residential in Kambalda and Kalgoorlie with 13% being FIFO.

The Long Operation involves the underground mining of ore and waste rock. Traditional stope and air leg mining methods are employed. IGO has an off-take agreement with BHPB where the ore produced from the mine is delivered to their adjacent concentrator facility for toll treatment and production of nickel concentrate. In FY2015, the mine produced 258,634 tonnes of ore and 110,570 tonnes of waste rock.

The mining process at the Long Operation results in the creation of underground voids. Where the surrounding rock is also to be mined, these voids must be backfilled to prevent the collapse of the new mining areas. This is achieved by backfilling voids with a paste fill made from cement and tailings sourced from the neighbouring St Ives Gold Mine. This backfill material is manufactured on site at our paste plant and pumped underground. At present all exploration activity at Long Operation is conducted underground.

FIGURE 9 LONG OPERATION



#### CONSUMABLES

The main consumables at Long Operation in FY2015 were electricity, ground support steel, water, diesel and explosives in order of dollar value.

The Long Operation sources electricity from BHPB, which sources electricity from Trans Alta gas turbines located at BHP Billiton Nickel West Pty Ltd's (BHPB's) concentrator facility.

Although the mine extends under the western edge of Lake Lefroy, the mine itself is relatively dry. Most of the water captured underground is recycled in the mining activity. Approximately 288.5 ML p.a is pumped to the surface. Some is used in the backfill manufacturing process and approximately 253.9 ML p.a is discharged onto the saltpan of Lake Lefroy.

The project development has required the clearance of 76.5 ha of natural bush to date.

#### WASTE

The relatively small mass of extracted waste rock is placed in a single waste rock dump. A proportion of this material is classified as potentially acid forming (or PAF).

A small volume of both putrescible and hard waste is disposed of in the onsite landfill.

#### NATIVE TITLE

The Long Operation is situated on tenure over which a Native Title claim has been lodged under the Australian Native Title Act 1993.

#### LIFE OF MINE

At present the expected life of mine based on reserves is two and a half years. A mine closure plan has been developed and is updated every three years.



\$26.6 M

in salaries paid

\$7 M

in State royalties paid

## JAGUAR OPERATION

The Jaguar Operation is comprised of State mining, exploration and miscellaneous leases. The nearest towns to the Jaguar Operation are Leonora and Leinster. The Jaguar Operation is primarily situated on Tarmoola and Weebo pastoral leases.

Given the 35-year history of mining activities within the Jaguar Operation's mining leases, the area has been heavily impacted. These impacts include exploration land clearing, road development, and the existence of mining related structures including waste rock dumps, historic tailings storage facilities, and lay down areas. The surrounding bushland has also been severely degraded as a result of prolonged grazing by goats and cattle within the surrounding pastoral leases. The most significant historic feature is the abandoned Teutonic Bore open pit. (Refer to the Environmental impacts section of this report).

#### LOCATION

The Jaguar Operation is 60km north of Leonora in Western Australia.



#### **BACKGROUND**

The Jaquar Operation comprises approximately 395.4 square kilometres of tenements. The area has historically hosted three economically viable underground mines; the first discovered was the Teutonic Bore. The Jaquar deposit was discovered in 2002 approximately 4km south of the Teutonic Bore and the most recent discovery, the Bentley deposit, was discovered in 2008.

The Jaguar Operation was acquired by IGO as part of the takeover of Jabiru Metals Limited in 2011. The Operation now consists of the nearby Bentley zinc-copper-silvergold underground mine, the Jaguar processing facility, administration infrastructure, and the accommodation village. Operations in the Jaquar underground mine ended at the start of FY2014, and, as a result, all FY2015 mill production ore is expected to be sourced from the Bentley deposit.

IGO's operations involve the underground mining of ore and waste rock. Traditional stope mining methods are employed. Ore is processed on site at a nominal rate of 450 to 480 ktpa. The processing plant has been designed to recover copper and zinc by ore crushing, milling, classification, flotation, thickening, and concentrate The plant produces a saleable copper sulphide product containing 25 to 28% copper and zinc sulphide product containing 48 to 50% zinc. Additionally, IGO receives credits for the silver and gold that is incidentally captured in our concentrates.

Once filtered the concentrate contains about 10% moisture. Copper and zinc concentrates are packaged into sealed sea containers and transported 720km from site to Geraldton Port for export.

Jaguar's workforce is predominantly FIFO with some employees drive-in drive-out.

In FY2015, the Jaguar Operation produced a total of 485,302 tonnes of ore exclusively from the Bentley underground mine which produced 93,093 tonnes of Zinc concentrate and 28,936 tonnes of copper concentrate.

The mining process at the Jaquar Operation results in the creation of underground voids. Where the surrounding rock is also to be mined, these voids must be backfilled to prevent the collapse of the new mining areas. At Jaguar this is achieved by backfilling voids with waste rock and cement aggregate fill (CAF).

At present, exploration activity at Jaquar is carried out from both underground and surface drill sites.

The Jaquar Operation has required the clearance of 342 ha of natural bush to date.

#### CONSUMARIES

The main consumables used at Jaguar in FY2015 were natural gas, diesel, grinding media (steel balls) and explosives.

The majority of power generation for the Jaguar Operation is fuelled by compressed natural gas (CNG) at the Jaquar power station. However, some areas (e.g. the Jaguar accommodation village) are powered by local diesel-fuelled generators as power lines have not been installed to all areas.

Water is pumped from the Bentley underground mine to settling dams then onto the Jaguar process water dam. Approximately 1,100 MLpa is dewatered from underground. This water is used in the processing plant, re-used underground, and for exploration activities. Any surplus water is discharged into the historic Teutonic Bore mine pit, allowing it to be pumped back to the processing plant if required. The volume of water discharged into the Teutonic Bore pit is approximately 425 MLpa.

#### WASTE

The key waste streams from the mine are waste rock and tailings.

In addition to the mineralised ore, waste rock is extracted from underground and placed in waste rock dumps. This rock contains some material that is classified as PAF.

The PAF rock from the Jaguar Operation has been encapsulated within non-PAF material and rehabilitated. Annual photo-monitoring records vegetation health and provides clear evidence for the presence or absence of acid mine drainage (AMD). Results to date suggest that no AMD is occurring.

As noted previously, such material, if left unmanaged and exposed to the elements, can generate an acidic discharge that can cause downstream impacts on biota and groundwater. Given this, the waste rock dumps have been designed, and are being constructed, so the potentially-acid forming material is blended with neutralising waste rock and then placed on top of the waste dump which prevents run-off and leaching. The waste dump is situated in a previously disturbed area away from ephemeral streamlines so any natural run-off is contained within the site's boundaries. The waste rock is then utilised in the Bentley CAF plant and returned underground which prevents prolonged exposure to the elements, thus reducing acid mine drainage potential. Current forecasts predict that the entire Bentley waste rock dump will be crushed and utilised for the production of CAF. This means the current waste rock dump area will require minor rehabilitation at mine closure and will have no risk of AMD as any PAF waste rock will be underground.

The mining process generates tailings, which are pumped to the tailings storage facility for disposal. The facility is designed to allow the tailings to settle forming a 'beach' that drains to a central pond. Ponded tailings liquor is recovered and returned to the process plant. Tailings are cyclically deposited and the beaches evaporatively dry, which enables the dried tailings to be progressively stacked higher. A key environmental consideration in this part of the process is the classification of the tailings as PAF and the low pH (ranging 3-5) of the tailings return water. It is likely that both the water and tailings would have a detrimental effect on the surrounding environment if released.

A small volume of both putrescible and hard waste is disposed of in the onsite landfill.

#### NATIVE TITLE

At present, the Jaguar Operation is not subject to a Native Tile claim under the Australian Native Title Act 1993.

#### LIFE OF MINE

At present the expected life of mine based on current reserves for the Jaquar Operation is two and a half years. A mine closure plan has been developed and is updated every three years.

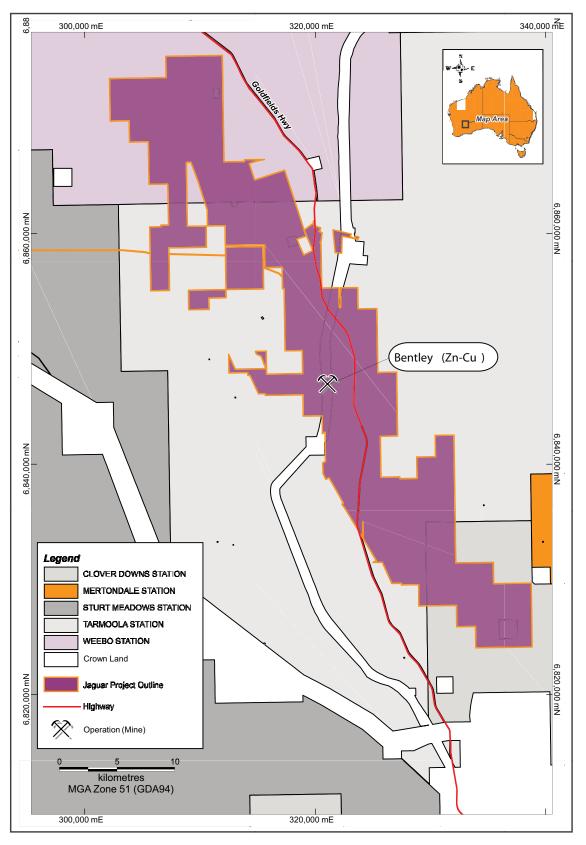


Noel commenced work in the mining industry in 1967. He has held many and varied roles including leadership positions – having worked as both Foreman and Shift Boss at different mines. Noel has been witness to the evolution in mining's processes, machinery and safety improvements.

"I like the hard work and the challenges then and now. My job keeps me fit and well."

Noel McGuirk Underground Mine Supervisor Long Operation

FIGURE 10 JAGUAR OPERATION





# **NEW BUSINESS**

A key focus for IGO is to ensure the long-term sustainability of the organisation and enable value creation for all stakeholders. During FY2015, Exploration, Projects and Business Development were consolidated into a combined New Business Team to provide a seamless integration of the growth function for the Company.

Key activities included:

- focused screening of mergers and acquisitions (M&A)
- opportunities aligned with the company's investment
- progression of the Stockman Project through project permitting and optimisation studies
- proactive management of the exploration portfolio with a focus on creating a step-change in exploration opportunities with the appropriate risk/reward weighting

These positions are belt-scale gold and base metal opportunities capable of delivering assets of significant size, high margin and long life.



#### LOOKING FOR NEW **OPPORTUNITIES**

"Growing our business includes both exploration and seeking acquisition opportunities."

Michelle Wild Principal Resource Geologist, Perth Office



#### **NOVA PROJECT**

The Nova Project is based on a twin nickel-copper-cobalt sulphide deposit known as the Nova-Bollinger deposit. The Nova-Bollinger deposit is 700km east of Perth. Sirius Resources NL (Sirius) obtained 100% ownership in May 2014 following the purchase of Mark Creasy's 30% joint venture interest.

A Definitive Feasibility Study (DFS) was completed on 14 June 2014. As part of the DFS, the Nova-Bollinger JORC resource estimate was updated to 14.3 Mt at 2.3% nickel, 0.9% copper and 0.08% cobalt for 325,000 tonnes of nickel, 134,000 tonnes of copper and 11,000 tonnes of cobalt.

On 4 August 2014, Sirius signed the Nova Mining Agreement with the Ngadju, the traditional owners of the land comprising the Nova Project. Subsequently, the Nova Mining Lease (M28/276) was granted on 19 August 2014. Construction at Nova commenced on 26 January 2015, following receipt of final statutory approvals.

At full production, Nova is expected to produce an average of 26,000 tonnes of nickel, 850 tonnes of cobalt and 11,500 tonnes of copper annually. On 27 February 2015, it was announced that a three-year off-take agreement had been signed with BHPB for 50% of the forecast nickel sulphide concentrate to be produced from Nova. Subsequently, on 13 May 2015 Sirius announced it had signed a three-year off-take agreement with Trafigura for 100% of its future copper sulphide concentrate produced from Nova.

Milestone	Estimated Timing
First Ore from Development	Q2 2016
First Ore Feed to the Processing Plant	Q3 2016
First Concentrate Production	Q4 2016
First Nickel Concentrate Shipment	Q1 2017
First Copper Concentrate Shipment	Q1 2017

In January 2015, following the granting of all mining permits, excavation and construction of the interim accommodation, aerodrome and access road commenced. A 492-person accommodation village has been largely completed and the initial construction camp has been decommissioned. A 2km long, all-weather, sealed airstrip has been completed as has the tailings storage facility. The underground mine's box cut was completed in May 2015 and the development of the decline is progressing to plan.

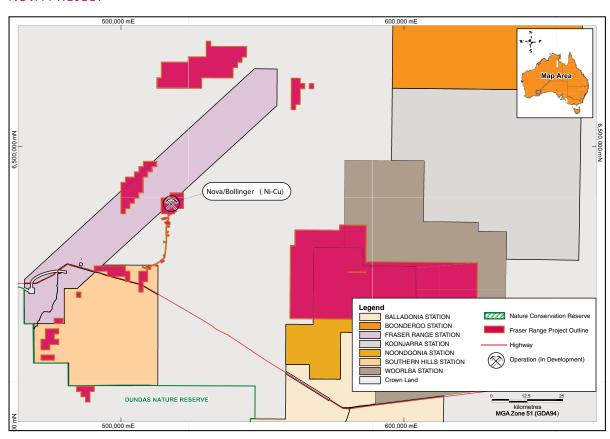
In June 2015, GR Engineering Services Limited was awarded a \$114 million Engineering, Procurement and Construction (EP&C) contract for the design and processing of the mineral processing and paste fill plant. Design work on the plant is underway and expected to be completed in November 2016.

Production from the Nova Project is expected to commence in late 2016.

# 14.3 Mt

nickel ore mineral resource

FIGURE 11
NOVA PROJECT



## **SAFETY CASE STUDY:**

# ICAM TRAINING FOR SUPERVISORS AND SAFETY REPRESENTATIVES

A key challenge for many businesses including IGO lies in ensuring supervisors, front-line leaders and elected safety representatives have the right set of skills. One of these skills is the ability to complete a basic incident investigation. In FY2015 IGO commenced a program to deliver incident investigation training (known as ICAM) to our front-line leaders at our Jaguar Operation. Selected individuals have or will be provided, with the opportunity to completed advanced ICAM training.

The objective of the training is to provide the tools and knowledge that will enable our leaders to conduct a systematic investigation including scene management, evidence gathering, interview techniques, and basic investigation report writing. This training is specifically intended to teach participants to distinguish between root causes, contributing factors and the identification of credible corrective actions. This will improve both their capabilities and IGO's capacity to improve safety in the workplace.



Responsibility for most incident investigations rests with our supervisors, front-line leaders and elected safety representatives.



#### STOCKMAN PROJECT

The Stockman Project is located in the East Gippsland region of north-eastern Victoria, 460km by road from Melbourne and approximately 19km east-south-east of Benambra. The Stockman Project was acquired as part of IGO's 2011 acquisition of Jabiru Metals Limited.

The Stockman Project encompasses two copper-zinc-silver-gold deposits, Wilga and Currawong. The larger Currawong deposit is fully intact. A core of copper-rich ore from the Wilga deposit was previously mined between 1992 and 1996.

At present, IGO is seeking approvals to develop an operation that would see the concurrent underground mining of the two deposits. These will feed a 1.0 Mtpa differential flotation concentrator to produce approximately 150,000 tpa of copper and zinc concentrates over a project life of approximately ten years. The concentrate products would be sold to customer smelters (most probably in the southern Asia region).

The Environment Effects Statement (EES) for the Stockman Project, the overarching permitting instrument for the project under the *Victorian Environment Effects Act 1978*, was publicly exhibited in April and May 2014. In June 2014, a Public Panel Inquiry was held, at which stakeholder submissions were reviewed. Following ministerial review of the panel report, in late 2014, IGO received a positive assessment from the Victorian Government, and project approval from the Commonwealth, subject to conditions. This allowed the project to proceed to the licensing phase, which is expected to be concluded in the first half of 2016.

The outstanding licensing issues include the preparation of a project work plan and the Planning Scheme Amendment (PSA). These are required to obtain consent for the construction of infrastructure outside the mining tenement, including the accommodation village.

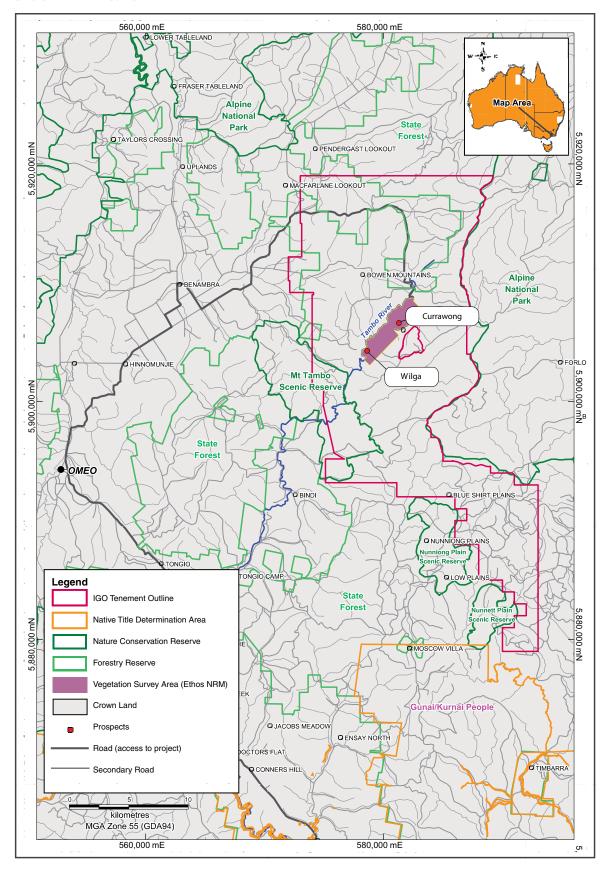
The main tasks being undertaken to achieve licencing include:

- detailed design of the tailings storage facility, which is being overseen by a panel of independent technical reviewers
- developing detailed water management plans to ensure maximum recycling of water through the project, a minimum requirement for water drawn from offsite resources, so water quality of surrounding catchments and waterways is uncompromised
- approval of the Cultural Heritage Management Plan
- development of a comprehensive Bushfire and Emergency Response Plan, covering all onsite and offsite facilities and activities, to ensure safety of employees in the event of a bushfire
- further construction and operational environmental management planning
- development of water quality and other biophysical monitoring plans
- detailed infrastructure layouts and plans.

IGO is required to establish a formal Environmental Reference Committee (ERC) under the MRSDA, and is required by the Ministerial Assessment to do so before beginning construction. The ERC, comprised of a broad range of stakeholders, will receive regular reports regarding Stockman's environmental and social performance. The committee will also be able to question the company on all aspects of its operations. The ERC will be established once current technical investigations have been completed, and the results and further planned work can be reported to stakeholders.

Stockman will require a Final Investment Decision (FID) from the Board in order to proceed once planning and permitting have reached appropriate points. If the Board concludes the project is strategically and financially viable, project construction is likely to take a further 24 months to bring into operation from that time.

FIGURE 12 STOCKMAN PROJECT







Lawrence commenced work in the mining industry in 2000. He started as an Environment Officer then moved into underground truck driving. He has been in his current role for four years.

"As a truck driver I'm in contact with almost everyone on my crew. I like the work and the people. I like the fact that everybody looks out for each other's safety."

Lawrence George **Underground Mining Team** Jaguar Operation

#### **EXPLORATION**

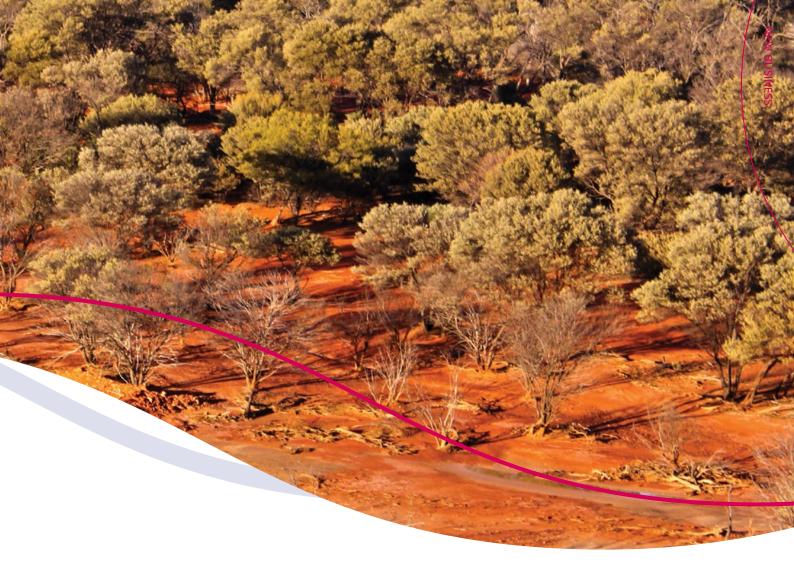
#### LAKE MACKAY JOINT VENTURE

Early in FY2014, IGO entered into an exploration joint venture with ABM Resources, which has the potential for IGO to earn up to a 70% interest in a portfolio of tenements in the Lake Mackay Project. The project includes 7,200 square kilometres of exploration licences and a further 5,000 square kilometres of exploration licence applications.

The central project area is approximately 460km westnorth-west of Alice Springs and is accessed via the Tanami Road, then along the Central Mount Wedge-Newhaven-Nyripi Road. The Lake Mackay region falls into the Great Sandy Desert Bioregion and is comprised of predominantly semi-arid sand plains with sand dunes.

The area is very remote and has been the focus of very little work by past explorers. IGO is exploring for Tanamistyle orogenic gold and magmatic nickel copper and volcanogenic massive sulphide (VMS)-style mineralisation. The exploration approach has been to blanket the project area with high-resolution surface geochemical sampling and follow-up any anomalies with air core drill testing.

The underlying land tenure falls within areas covered by the Aboriginal Land Rights (NT) Act and as such access by explorers is covered by very stringent protocols under a Deed of Exploration with the Central Land Council. All work programs must be submitted to the Central Land Council for approval and meetings are held with Traditional Owners to discuss the proposed activities.



#### BYRAH BASIN JOINT VENTURE

IGO's exploration joint venture with Alchemy Resources Limited has the potential for IGO to earn a 70 to 80% interest in the Bryah Basin Project.

The Byrah Basin JV is 100km north of Meekatharra in Western Australia, north-west of the Great Northern Highway. Following the discovery of the high-grade DeGrussa VMS copper-gold deposit in 2009, the area has become an exploration hotspot as VMS-style ore bodies often occur in clusters or camps.

IGO's activities over the past year have comprised air core and RC drill testing of a favourable stratigraphic horizon, along which numerous geochemical anomalies have been defined. The southern and eastern portion of the project fall within the former Doolgunna Pastoral Lease, which is now designated as a Proposed Conservation Area under the control of the Department of Parks and Wildlife. The JV operates under an approved Environmental and Conservation Management Plan (ECMP) developed by Alchemy for those areas that fall within the former Doolgunna Pastoral Lease. The ECMP includes a risk assessment and protocols for proactive environmental management and rehabilitation.

#### SALT CREEK JOINT VENTURE

The Salt Creek JV (SCJV) comprises tenements that were previously part of the Tropicana JV with AngloGold Ashanti.

The JV area is approximately 220 km east of Kalgoorlie in the Great Victoria Desert. The tenements are now in a reverse JV with AngloGold Ashanti where IGO may increase its equity in the project tenure from 30% to 70% via exploration expenditure. IGO's principal interest in the SCJV is exploration for magmatic nickel-copper sulphides similar in style to the Nova-Bollinger deposits located south of the JV area. IGO has been undertaking a combination of moving loop electromagnetic surveys, gravity surveys and aircore drilling to vector in to areas of highest prospectivity.

Due to the location of the SCJV, some of the activities are designated as a 'controlled action' under the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) requiring adherence to an approved Conservation and Environmental Management Plan (CEMP). The CEMP requires the risks and potential impacts of exploration activities to be assessed and management measures to be put in place to mitigate these impacts.



#### SCANDINAVIAN JOINT VENTURE

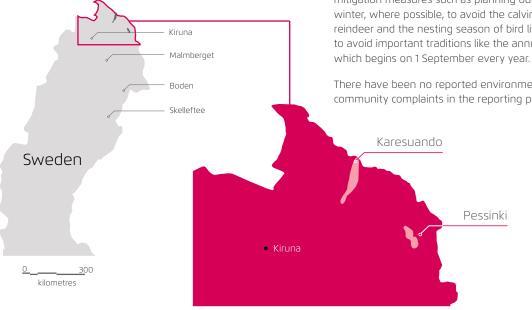
IGO has been undertaking exploration activities in Scandinavia since 2007, under a number of nickel-copper focused joint ventures with the Toronto Stock Exchange (TSX)-listed company Mawson Resources Ltd ('MAW'), based in Sweden. The JV exploration activities have included regional prospecting, regional geochemical surveys and both ground and airborne geophysical surveys.

The JV has sought to engage various stakeholders. Some of those consulted have raised concerns. The most common theme is a general concern about the scale and potential for widespread impact associated with mining; a concern that arises from the fact that, for many people, their only experience of mining in the region has been large scale open pit iron ore mining. Other concerns include the industries potential impacts on communities and people's lifestyles. Of specific and consistent concern is the potential to impact on reindeer migration and water contamination.

IGO, in association with its JV partners, are clearly advocates for mining. Notwithstanding this we have sought to pursue our interests in exploration while responding to the concerns of those with whom we engage. With regard to the potential impacts of our exploration activities, we have employed a range of mitigation measures such as planning our activities in winter, where possible, to avoid the calving season of reindeer and the nesting season of bird life, and similarly to avoid important traditions like the annual moose hunt,

There have been no reported environmental incidents or community complaints in the reporting period.

# FIGURE 13 **SCANDINAVIAN JV**





## SAFETY CASE STUDY:

# BG4 TRAINING - JAGUAR OPERATIONS

Jaguar Operations has embarked on improving Emergency Response Capabilities across the mine site. The BG4 Closed Circuit Rebreather course is run over a five-day period and is conducted by our Emergency Response Team (ERT) Coordinator required to work in both on the surface and in the underground environments.

As part of the program our ERT members are required to dismantle and reassemble the BG4 breathing apparatus with restricted visibility i.e. in the dark. They are also required to conduct robust fitness testing comprising of cardio exercises and stamina assessment to prepare them for the very strenuous task requirements of conducting rescue operations.

The classes eventually culminate in a mock Emergency Exercise designed to test each of the learning outcomes. It is also designed to test each candidate to their full capacity and ensure they are fully prepared for any situation that may require the use of this vital equipment when rescuing an injured workmate.

We are proud of the efforts of all the personnel involved and hope we never have to use these skills and/or equipment in any environment outside the competition.



Jaquar Operations has embarked on improving the Emergency Response Capabilities across the mine site.



# **ECONOMIC IMPACT**

The resources industry in general has served Australia well. It has underpinned, until recently, a boom in the economy. Western Australia has seen major economic growth, particularly in Perth, and throughout regional centres and within industries that service the mining industry.

For FY2014 the Government of Western Australia reported that the total output of the Western Australian minerals industry was \$86.5 billion. The value of IGO's products in FY2015, including Tropicana was approximately \$491 million. Similarly for FY2014, the total expenditure for mineral exploration in Western Australia was about \$1 billion (www.dmp.wa.gov.au/7846.aspx). IGO's expenditure on exploration in 2014 was \$43.6 million and in 2015 it was \$37.7 million.

In 2014, gold was the second most valuable mineral sector in WA after iron ore, with total sales of \$8.7 billion, representing 10% of the mineral sector's total sales. The quantity sold by the WA gold industry rose from 6.6 million ounces in 2013 to 6.8 million ounces, a 3% increase. IGO gold sales were valued at \$147 million in 2014 and \$228 million in FY2015.

In 2014, nickel was Western Australia's fourth most valuable sector of the mining industry (www.dmp.wa.gov.au). Although the quantity of nickel sales fell by 15% to 195,000 tonnes, the total value increased by 6%, from \$3.4 billion in 2013 to \$3.6 billion. IGO nickel sales were valued at \$117 million in 2014 and \$105 million in FY2015.



#### CREATING OPPORTUNITY

"Individual mines come and go, but our industry creates opportunities for people and supports communities in many ways."

Josh Shinn Safety Representative Underground Bogger Operator Jaguar Operation



## OPERATING PERFORMANCE

In FY2015, IGO succeeded in meeting or bettering all of its production and cash cost guidance for all three operating mines, Tropicana, Jaguar and Long. Notably, revenue and net cash flow from operating activities were the highest achieved in IGO's 13-year history. Importantly, safety performance as measured by Lost Time Injuries and Total Reportable Injuries improved by greater than 60% and 60% respectively. Elsewhere, we progressed brownfields and greenfields exploration and acquired a 4.9% stake in Gold Road Resources.

For further information on IGO's operational performance, refer to the FY2015 Annual Report.

# **FY2015 FINANCIAL PERFORMANCE**

- Revenue increased by 25% to \$499.0 million, a record level for IGO
- Underlying earnings before interest, taxes, depreciation, and amortisation (EBITDA) increased by 44% to \$213 million, a record level for IGO.
- Net profit after tax increased by 57% to \$77 million.
- Net cash flows from operating activities increased by 59% to \$202 million.
- Net cash, cash equivalents and debt improved 430% to \$120 million as at 30 June 2015.
- Total fully-franked dividends paid during FY2015 were up 275% to 11 cents per share.
- Final Dividend pool of \$10.5 million established with a record date to be set on or before 30 September 2015.
- \$550 million unsecured term corporate finance facilities agreed.

For further information on IGO's financial performance, refer to the FY2015 Annual Report.

# SOCIO-ECONOMIC **CONTRIBUTIONS**

IGO's socio-economic contributions can be measured by the salaries and other employment benefits we provide to our staff, the money we spend on contractors and consultants, the money we pay in taxes and royalties, and through our corporate giving.

#### Socio-economic Contributions

Salaries (excluding Tropicana JV)	\$60.9 million
Tax & State royalties (including IGO's part of Tropicana JV)	\$19.2 million
Corporate giving	\$0.21 million

During 2013, the Department of Mines and Petroleum (DMP) collected more than \$4.8 billion in royalties (as opposed to taxation of company income) from mineral producers in Western Australia (refer to www.dmp.wa.gov.au/11857.aspx). As part of general revenue, the State Government used this revenue to contribute to funding in areas such as law enforcement, education, health, roads and community development programs. IGO made royalty payments totalling approximately \$16 million in FY2015 (this includes 30% of the royalty paid by AngloGold Ashanti for Tropicana gold).

In FY2015, IGO spent a total of \$214,000 on community development and related projects and activities. This equates to approximately 0.04% of total revenues.



# **PROCUREMENT**

IGO supports economic development in the communities in which it operates by seeking to invest first locally and then regionally, then within Western Australia, then nationally and finally internationally.

At the Long Operation, our highest value contracts are our off-take agreements with BHPB, which processes IGO concentrate, diamond drilling and fuel.

At the Jaguar Operation our highest value procurement contracts are our transport contracts and gas purchases. These services and materials are sourced from large, reputable organisations with operations in Australia.

\$33 M spent on our top 10 consumables



## AT THE LONG OPERATION, IN FY2015 OUR TOP TEN SUPPLIERS OR SERVICE PROVIDERS BY EXPENDITURE WERE:

- 1. BHPB Nickel West Pty Ltd
- 2. Swick Mining Services Pty Ltd
- Little Industries Pty Ltd
- 4. Australian Fuel Distributors Pty Ltd
- 5. Westrac Equipment Pty Ltd
- 6. DDH1 Drilling Pty Ltd
- Orica Australia Pty Ltd
- 8. LHS Rocktools Aust Pty Ltd
- BGC Cement Pty Ltd
- 10. CJD Equipment Pty Ltd

# AT THE JAGUAR OPERATION, IN FY2015 OUR TOP TEN SUPPLIERS OR SERVICE PROVIDERS BY EXPENDITURE WERE:

- 1. Qube Bulk Pty Ltd
- 2. Westrac Equipment Pty Ltd
- 3. Qube Ports Pty Ltd
- 4. Australian Fuel Distributors Pty Ltd
- 5. Sandvik Mining & Construction Pty Ltd
- 6. Boart Longyear Pty Ltd
- 7. Austral Asia Line Pte Ltd
- 8. Action Industrial Catering Pty Ltd
- 9. Alinta Sales Pty Ltd
- 10. Bundarra Contracting Pty Ltd

It is noteworthy that one of our top 10 service providers is Bundarra Contracting Pty Ltd, a business owned and run by the lands' Traditional Owners.



# AT THE TROPICANA JV, ANGLOGOLD ASHANTI'S TOP TEN SUPPLIERS OR SERVICE PROVIDERS IN CALENDER YEAR 2014 BY **EXPENDITURE WERE:**

- 1. MacMahon Contractor Pty Ltd
- 2. Caltex Australia
- 3. Pacific Industrial Company
- 4. Compass Group (Aust) Pty LTD
- 5. CSBP limited
- 6. CPC Goldfields Pty Ltd
- 7. Pacific Energy (KPS) Pty Ltd
- 8. Moly-Cop Australia
- 9. Network Aviation Australia
- 10. 3D Earthmoving PTY LTD

## **OFF-TAKE AGREEMENT**

IGO has an agreement with BHPB whereby the ore produced from the Long Operation is delivered to their adjacent BHPB Kambalda Nickel Concentrator for toll treatment and production of nickel concentrate.

#### **CUSTOMERS**

In FY2015, IGO had four key customers:

- All gold production from the Tropicana JV is sold to the Perth Mint.
- All nickel ore from the Long Operation is sold to BHPB.
- Since January 2015, all of the concentrate production from Jaquar has been sold to MRI.

Prior to December 2014, most of the concentrate produced by the Jaquar Operation was sold to Glencore and the remainder was sold to MRI Trading AG (MRI).



# **SOCIAL IMPACT**

IGO is a significant mid-cap mining company in the Australian mining industry. The nature of both our positive and negative impacts is comparable to other miners in the industry and the magnitude of our social impact is proportionate to our size. Notwithstanding the commonality of these issues to most industry participants, we believe we have 45 material issues worthy of commentary.



## THE REWARDS OF **DILIGENCE**

"The Long Operation has been generating value for many years thanks to the diligence and hard work of our people."

Phil Rixon Registered Manager Long Operation



#### OUR PEOPLE

Our people come from many backgrounds and bring a range of skills and experience to our organisation. In order to maintain this diversity we are an equal opportunity employer and are committed to finding ways to increase the diversity and inclusion of all at our places of work. We make this commitment because we know that diversity and inclusion deliver significant social and commercial value to our people and the communities in which we work but also because we believe it is the 'right' thing to do to support and exemplify our values of teamwork and respect.

Our workplaces are committed to the implementation of policies, procedures and training that support our people

Our Code of Conduct underpins all that we do. It provides our people with a framework to support harmony and cohesion. Our workplaces are committed to the implementation of policies, procedures and training that support our people to work together and provide guidance in a number of areas including harassment and discrimination.

We promote and support diversity by ensuring fair and comparable pay and benefits, access to training, development and promotion, and the inclusion of all our people. We recognise the importance of recruiting broadly from a diverse pool of qualified candidates and employing the most suitable applicant for all vacant positions with a merit based selection process. Our recruitment and selection procedures are designed to assess all applicants according to their skills, knowledge, qualifications and capabilities without regard to factors such as age, gender, marital status, race, religion, or physical impairment. We

also recognise the effect of unconscious bias on hiring decisions, promotions and organisational diversity, and we work with IGO's leaders through the recruitment process to ensure that these issues are identified and challenged.

Like many companies in the resources sector, we have a gender imbalanced workforce. At IGO our workforce is 83% male and 17% female. One of our key challenges for the coming year is to increase the number of women in leadership positions and also in technical and operating roles. We aim to increase our focus on succession planning, continue improving the diversity in our talent pipelines to encourage a diverse group towards leadership positions, and develop and retain senior women.

Another key objective is to introduce KPIs for senior management to measure the achievement of our diversity strategies. These KPIs will link part of senior management's remuneration (either directly or as part of a 'balanced scorecard' approach) to the achievement of our diversity objectives.



A WA School of Mines graduate (BEng Minerals Engineering) with over 20 years' experience in the mining industry in both technical and production roles. Melinda's responsibilities include personnel management and development, production planning, maintenance, operational excellence and process optimisation.

"My role provides me with a mix of people, safety and production challenges. Each day dawns with new improvement opportunities, the need to evaluate priorities while keeping focused on our goals."

Melinda Robertson Concentrator Manager Jaguar Operation

#### IGO WORKFORCE, PROFILE AND TURNOVER

The majority of our workforce is located in Western Australia and are mainly based at three locations – our Corporate Head Office in Perth and our sites at Kambalda and north of Leonora. The Jaquar Operation and the Tropicana Gold Mine operate exclusively as FIFO sites, while the Long Operation combines a majority of residential roles with some FIFO roles.

At present IGO has a workforce of 434 people.

	Staff	Contractors	Total	
Corporate	42	4	46	
Exploration	42	3	45	
Jaguar Operation	163	54	217	
Long Operation	119	7	126	
	366	68	434	

As in any year, employee numbers change over the course of the year through resignations, redundancies and the effect of our strategy of growth. Overall this year we saw a small decrease in direct employee numbers of 2% and finished the FY2015 year with 366 employees and 68 contractors (these numbers exclude the Tropicana Gold Mine). To this end our annual employee turnover rate has increased in FY2015 to 27.6% (from 25% in FY2014), which was contributed to by an increase in both voluntary (44% up from 32.6% in FY2014) and involuntary turnover (55.34% up from 53.3% in FY2014). One of our key objectives for FY2016 is to investigate the reasons behind our current turnover rates and action strategies to drive a reduction of employee turnover.

It is noteworthy to contrast IGO's employee numbers with that of the entire Western Australia mining industry.

	Company Numbers	Employee Numbers (average figures for 2013/14)
Large Mining (200+ employees)	50	Mining: 97,795
Small to Medium Mining (1 to 200 employees)	1,120	Mineral Exploration: 2,375

(For further information refer to www.dmp.wa.gov.au).



#### THE CHALLENGE OF FIFO

The FIFO work environment presents a number of challenges for our people and has been the subject of significant public debate in the last few years with both State and Federal government enquiries. We understand that working away from home can be stressful when the environment is impersonal and does not feel like home for people when off duty. We recognise the importance of the standard of accommodation, the food, and the need for people to feel at home in the residential village. It is a high priority to ensure that our people live in an environment where they do not constantly feel like they are 'on duty'. Our view is that it is important for people to have their own room and 'personal space' for 'down time'. It is also of high importance that the standard of food and the quality of the canteens/kitchens and other facilities allows for a level of relaxation and de-stressing. Our Social Club and theme nights are an important part of us creating a sense of community and providing a level of 'fun' that is important to this concept of 'down time' and relaxation.

IGO has always supported growth through innovation and recognised the value of developing our people to achieve their potential. We also appreciate the challenge our FIFO workers face being away from home where all the little 'ordinary' things are happening in the life of their families at home. We believe that the ability to communicate with their family using reliable mobile and Internet coverage is critical for our people to maintain this contact. The opportunity for real-time contact by Skype or phone provides this avenue for contact and we have installed a mobile tower, WI-FI and televisions in each room at our Jaguar Operations to facilitate the best communication possible for our people and their families.

Family emergencies can present further challenges to FIFO workers. To address this we have developed good relationships with our airline carriers to enable us to move our people offsite in emergencies at relatively short notice. We also view a well-resourced, easy to access Employee Assistance Program (EAP) as an important point of confidential contact for our people and their immediate families. Our EAP has been used as a resource for our people for a range of personal issues relating to work stress, anxiety and depression, family, children and marriage. In the future we see that our EAP provider may be of assistance in the education program for applicants and new starters to understand and prepare for the impact of FIFO life.

#### INVESTING IN OUR WORKFORCE

IGO has always supported growth through innovation and recognised the value of developing our people to achieve their potential. We encourage the pursuit of further study in their area of expertise and offer study assistance for approved courses. We also seek to offer internal promotional opportunities within the Company. Retaining, developing and expanding the skills and experience of our existing employee group has been, and will continue to be, important to us and part of our commitment to our teams. In FY2015 we supported a number of our people through tertiary studies and had an active program of participants completing Certificate III in Resources/Mineral Processing, Certificate IV in Frontline Management and Certificate IV in Training and Assessing.

At an enterprise level we believe that investment in our future involves investment in the professional development of people in the disciplines and communities that support our businesses.

#### **GRADUATES AND APPRENTICES**

Our graduate, vacation and apprentice programs are aimed at developing professionals that can contribute to our organisation, support the future of our industry and give back to the communities in which they work. In FY2015 we inducted four new graduates, 10 vacation students and four apprentices into IGO. In FY2016 we plan to expand this program with the addition of an additional nine graduates, 14 vacation students and four apprentices. A key focus for FY2016 will be to develop coaching and support for an enterprise-wide capability framework.

At an operational level the training and development of our workforce is a core responsibility. This is a commitment that we intend to expand to a greater range of competencies and skills in 2016.

#### **WORKPLACE RELATIONS**

We foster a workplace environment where people are encouraged to express their ideas, opinions and concerns and we recognise their right to negotiate conditions of employment either individually or collectively.

In April 2014 we negotiated a new collective agreement with our people at our Jaguar Operation reaffirming our commitment to provide people with terms and conditions of employment that are fair and reasonable, and in line with the National Employment Standards and IGO business values. We were delighted with the level of engagement in the negotiation process with 82% of people who were eligible casting a vote. A majority 'yes' vote was recorded, a result that was a credit to the participation of the workforce at Jaguar and an example of their connection and commitment to our business and its future.

Reflecting our efforts to establish positive relationships with our workforce, no time was lost due to industrial issues involving an IGO employee in FY2015.

# 4 graduates inducted in FY2015

# 10 students

inducted in FY2015

# 4 apprentices

inducted in FY2015



\$2.2 M spent on Bundarra Contracting in FY2015

#### CONTRACTOR MANAGEMENT

From time to time IGO engages contractors (as both businesses and individuals) to provide various services at our sites (i.e. mine sites, exploration projects, warehouses and offices). When contractors are at an IGO site, their safety and welfare is IGO's responsibility.

IGO's Contractor Management Processes are evolving. We are in the process of implementing minimum performance criteria (safety, environment, governance, operating performance and site management) for our contractors. Once fully implemented, all contractors will be subject to a pre-qualification process to ensure they understand IGO's requirements and are held to account in respect of their performance. As a general principle, IGO expects contractors to conform to IGO's safety management system. Subject to contractual arrangements, IGO may require a contractor to also operate in accordance with their own safety management system. Irrespective of the arrangement, IGO expects that its contractors provide their workforce with a safe system of work and a safe place of work. We expect that they monitor and report on their performance, and that we see improved trends in measured outcomes. Put simply, we expect to see the same high standards expected of our direct employees, with no serious workplace injuries and a declining trend in minor injuries.

Our major contractors have requirements in their contracts consistent with the IGO Code of Conduct and Sustainability Standards. Our contractors are required to undertake a comprehensive program of IGO and work site inductions to develop a clear understanding of the requirements of working at our sites.

All contractors working at IGO sites are provided with an IGO representative to manage their contract. This provides IGO with a direct opportunity to maintain ongoing sustainability management.





# CASE STUDY: BUNDARRA CONTRACTING

Bundarra Contracting Pty Ltd is 100% owned and operated by Aboriginal people local to the goldfields region of Western Australia. It provides earthworks, labour hire, haul road construction, and fencing services to the mining industry. Since 2001 it has grown from a two-person part-time contract mustering goats and fencing to a thriving company with 25 employees at five different work sites including our Jaquar Operation. Bundarra Contracting is dedicated to developing a local Indigenous workforce operating in the northern goldfields of Western Australia, and IGO is pleased to have Bundarra involved in its business.

Bundarra Contracting is dedicated to developing a local Indigenous workforce operating in the northern goldfields of Western Australia



## **SAFETY**

In FY2015 IGO employees and contractors worked 1,008,390 hours. In all, 114 of our people suffered injuries of some type at IGO operated sites. This is 14% lower than the 132 injuries we recorded during 2014.

Including Tropicana, there we 280 injuries. There were no fatalities, serious injuries or permanently disabling injuries at either IGO operated sites or at the Tropicana Gold Mine. At IGO sites most of the injuries were minor: 11 injuries required medical treatment, time off work or meant people were assigned to alternate duties. It is acknowledged that the significant injuries were painful and caused distress to the injured people, their

In total IGO had six loss time injuries (LTI) for FY2015, and four restricted work injuries (RWI). In FY2015 IGO had five injuries that resulted in workers compensation claims.

IGO's lost-time injury frequency rate (LTIFR) was 2.94 injuries per million hours worked by our employees and contractors in 2015. These results are in line with the most recently published averages<sup>1</sup> for the Western Australian gold mining and nickel mining sectors which have a reported LTIFR of 2.6 and 3 respectively.

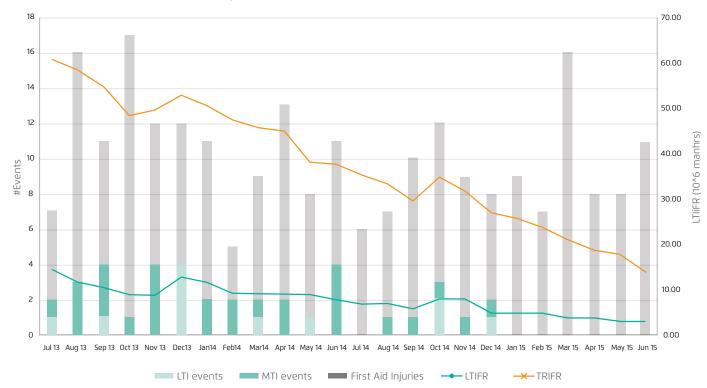
First Aid

workmates and their families.			Treatment		
Site	LTIs	RWIs	MTIs	Injuries	Totals
Long Operation	1	1	3	23	28
Jaguar Operation	2	2	1	73	78
All other	0	1	1	7	9
Total for IGO	3	4	5	103	115
Tropicana Gold Mine	2	4	14	152	172
Total including Tropicana Gold Mine	5	8	19	249	281

LTI – Lost Time Injury – Injuries that result in individuals not being able for work for a time. Restricted Work Injuries - injuries that require an individual to so something other than their normal job. MTI – Medically Treated Injuries – an injury requiring medical treatment.

IGO's safety performance has improved steadily over the last three years as measured by our key injury frequency rates (LTIFR and total injury frequency (TIF) rate).

FIGURE 14 IGO INJURIES AND INJURY FREQUENCY RATES



While we are encouraged by the improvement in our injury rates, we are not satisfied with our overall safety performance. Our clear objective is to improve. Our goal is to have no significant injuries (defined as any injury requiring medical treatment or time off work).

www.dmp.wa.gov.au/documents/Reports/MSH\_R\_SafetyPerformanceInTheWAMineralIndustry2013-2014.pdf



## OCCUPATIONAL HEALTH

Occupational health management has many facets. Our intention is to manage our work environment in a way that effectively minimises the exposure of our people to hazards that have the potential to cause long-term or chronic health impacts. Some hazards are readily managed while some are intrinsically difficult to manage. In this section we address two issues of particular note:

#### 1) RISK-BASED HYGIENE MANAGEMENT PLANNING

As of May 2015 mines in Western Australia were required to understand:

- 1. What our people are actually and potentially exposed to.
- 2. How our people are protected (or not) from these exposures.
- 3. What needs to be done for their protection in the short-term and long-term? (known as 'controls')

and implement:

- 4. Processes to confirm whether or not the 'controls' have been implemented and are effective.
- 5. A process for continuously monitoring and reviewing hygiene management.

At present IGO is variously developing or implementing the new requirements.

In FY2015 IGO had no claims for industrial disease.

#### 2) FUNCTIONAL CAPACITY

A common feature of the Australian mining workforce is an ageing demographic. The longer a person is in a role that requires hard physical labour, the greater the risk that they will develop some chronic injury. This presents real challenges for the individuals involved and the business who have a duty of care. IGO, like the business sector in general, continues to examine how this challenge is best managed.

In FY2015 IGO had 30 workers compensation claims for workplace injuries.



## **TRANSPORT**

Jaguar Operation receives a minimum of 78 trucks per year which travel approximately 900km from Perth to site, passing through several towns including Northam, Southern Cross, Kalgoorlie, Menzies and Leonora. Our contribution to the impacts created by vehicle movements through these towns is minimal.

Long Operation receives approximately 260 delivery trucks a year, the majority from Kalgoorlie located 57km north. The trucks pass close to Kambalda east and west, however the impact of dust and fuel emissions is minor as the road does not pass directly through the towns, and the area has been mined for more than 50 years and so homes have not been established near the infrastructure.

Tropicana receives 80 to 170 trucks a month. The majority of trucks travelling to Tropicana come from Perth or Kalgoorlie resulting in distances driven ranging from 350km to 1250km. The trucks pass through several towns including Northam, Merridin and Southern Cross on their way to Kalgoorlie. However, from Kalgoorlie, the trucks utilise the Tropicana access road which runs for approximately 350km and does not impact any local towns.



# COMMUNITY DEVELOPMENT AND ASSISTANCE

IGO has a structured and targeted Community Development and Assistance Program (CDAP).

The CDAP provides strategic assistance to a range of community-based programs with an emphasis on education and capacity building for Indigenous and non-Indigenous groups across urban, regional and disadvantaged communities.

IGO identifies appropriate opportunities and participates in the programs in consultation with the relevant organisations. It works closely with these organisations during the entire program cycle to help them achieve their goals and establish sustainable outcomes. IGO is focused on establishing and maintaining programs in the Leonora, Kambalda, Kalgoorlie and Boulder regions where it has its mining operations.

Structured programs to which IGO contributed during FY2015 under its CDAP include:

# Hundreds

of students assisted in a range of projects

#### LEONORA DISTRICT HIGH SCHOOL'S YOUNG LEADERS, HEALTHY LIFESTYLES AND BUSH **GARDEN**

At the conclusion of 2014, IGO had supported the development of a strong cohort of young leaders through a comprehensive leadership program as a means of developing their skills to become major contributors and leaders within the Leonora District High School and wider community environment. The program focused on the importance of leadership, the critical role of good communication and the ability to act on the students' leadership aspirations.

The challenge for Leonora's students has been to extend their leadership skills into a range of health, wellbeing and environmentally-based initiatives in 2015. To their credit, students, staff and community members have been busily laying the groundwork for a bush garden and a bike fitness program aimed at building healthy lifestyles, discipline and teamwork. IGO is confident of ongoing successes emanating from these progressive programs.

#### THE KAMBALDA WEST DISTRICT HIGH SCHOOL YOUTH LEADERSHIP PROGRAM

IGO has had a long-term commitment to support the development of youth leadership skills at Kambalda West District High School. The Youth Leadership Program promotes school attendance and achievement, and encourages students to explore their vocational options. It also supports the liaison with community groups and local shire to plan community improvement projects and social events. Staff have commented on the positive impact on student confidence and contributions to both the school and local community.



#### THE ABORIGINAL STUDENT SCHOLARSHIP PROGRAM WITH MT LAWLEY SENIOR HIGH **SCHOOL**

This scholarship program has been designed to provide Aboriginal students with a sound academic aptitude and the opportunity to attend a premier high school in Perth. Participating students receive encouragement from teachers to reach graduation and continue on to tertiary education or vocational study. The program provides individual learning plans, homework classes, tutors, access to the adjoining facilities at Edith Cowan University, cultural excursions and completion of a relevant research assignment.

Mt Lawley Senior High School Aboriginal Excellence Program (AEP) students have been strong supporters of Reconciliation Week Services at the Kings Park War Memorial since the program commenced in 2011. AEP students engage in the annual wreath laying ceremony at the site of the Eternal Flame as a sign of their respect for the fallen soldiers (pictured below). This special service required the involvement of the armed services, the Returned Services League, Department of Veterans' Affairs, Honouring Indigenous War Graves Inc. and affiliated Aboriginal organisations.

#### THE CHALLIS PRIMARY SCHOOL

Challis Primary School, located in Armadale, Perth, is in a disadvantaged area experiencing a range of social issues. IGO supports various programs at the school that aim to encourage social and scholastic development in the crucial early years of a child's education. The programs focus on early childhood development through to constructing a nature playground and developing a youth leadership program to encourage leadership skills and effective decision-making in the older primary students. IGO looks forward to officially opening the 'Ultimate Playground' at the end of 2015.

#### TEACH, LEARN, GROW

Teach, Learn, Grow is a volunteer-based tutoring program that sees university students give up their vacation time to spend one or two weeks, twice a year, in rural and remote schools throughout WA. IGO sponsors the 'Teach Learn Grow' team to work with primary school students in Coolgardie, Kalgoorlie and Boulder as part of its CDAP in the goldfields. The tutors engage in pre-service training and work in teams to provide assistance to both teachers and students. This program has been expanded in 2015 to include work with East Kalgoorlie Primary School, which has a 98% Aboriginal student population. IGO continues to receive positive feedback from all parties involved in the program.



Challis Primary School students proudly display their Independence Group shirts at a school assembly





# Connected

we acknowledge the traditional owners of the land in which we work

## TRADITIONAL LAND USE

IGO's activities are predominantly located in Australia and specifically within Western Australia. While our exploration activities do extend overseas, the scale and impact there is relatively small. Irrespective of where we work, we are mindful of our responsibilities in respect of the Traditional Owners on whose land we seek to operate. In most jurisdictions the nature of land title varies, as does the nature of the invested entities; e.g. governments, institutions, groups and individuals. Within the Australian context, Traditional Owners are key stakeholders.

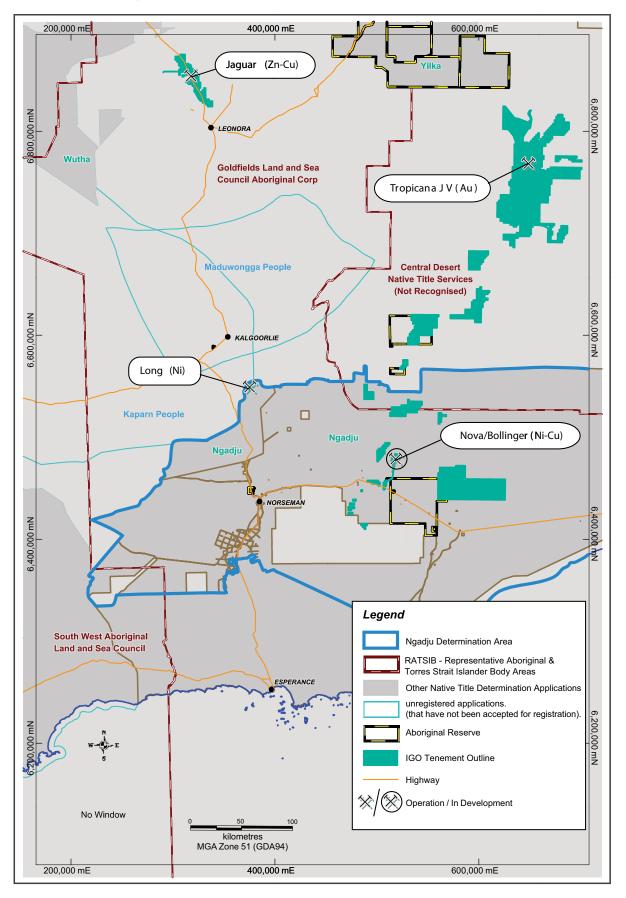
Our existing operations are located on lands with either claimed or determined title by various Aboriginal groups including the Koara, Ngalia, Wutha, Wongatha, and Ngadju peoples.

The adjacent map illustrates the locations of our operating mines, the Tropicana JV and the Nova Project relative to traditionally-owned lands.

As noted previously, our JV exploration activities in Scandinavia are situated on lands owned by the Sami people.

Irrespective of the nature of the title, IGO seeks to operate with due regard and respect for Traditional Owners. In circumstances where our activities progress to the point where a mine is established, IGO seeks to ensure the socio-economic benefits of the mine are shared by the Traditional Owners and negative impacts are minimised.

FIGURE 15 NATIVE TITLE AREAS





### NATIVE TITLE

In accordance with the Native Title Act 1993, various lands are subject to native title claims and determinations. IGO operates in accordance with the law and in close collaboration with our stakeholders, some of whom are Traditional Owners. The following outlines the status of claims as they affect IGO operations.

#### **NOVA PROJECT**

As part of the Nova Project's development, Sirius sought to secure a land access agreement over the mining and related tenements with the Traditional Owners, the Ngadju people. No determination had been made and Sirius and the Ngadju people entered into the Ngadju Mining Agreement. This agreement contains an acknowledgment that the Ngadju are the Traditional Owners of their claim area and have a legitimate interest. It also sets forth a range of benefits that Sirius, and subsequently IGO, will provide to Ngadju in return for which the Ngadju granted various consents to enable approval of the mine. Subsequent to signing this agreement, In November 2014, the Federal Court of Australia handed down a determination that native title exists over an area that includes the Nova Project.

#### LONG OPERATION

The Long Operation is also subject to a native title claim by the Ngadju people. Proceedings were brought in the Federal Court of Australia by the Ngadju in relation to a parcel of land containing a number of mining tenements adjacent to the three tenements held by the Long Operation. The Federal Court found that the re-granting of these tenements did not comply with the right to negotiate process prescribed under the Native Title Act 1993 and as such, those affected tenements are deemed invalid in so far as they are inconsistent with the Ngadju people's native title rights. The matter is currently on

appeal to the Full Bench of the Federal Court and the decision has been reserved. The final outcome of this decision, may or may not impact or delay IGO's planned exploration, development or production activities at Long. However it will not affect the main decline (i.e. the mine access tunnel) at Long, which is located on freehold land. The Company will continue to monitor the matter.

#### TROPICANA JV

The Tropicana JV is wholly within the area of the former Wongatha Native Title Claim (WC99/001). This claim was dismissed by the Federal Court in 2007. Notwithstanding this, the JV continues to work constructively with the traditional owners.

#### JAGUAR OPERATION

At present there are no registered native title claims over the tenure on which the Jaguar Operation is located. However, various parties have a connection with that country including the Koara, Ngalia, Wutha, and Wongatha peoples.

#### HERITAGE PROTECTION

At each of our operating mines, our projects and our various exploration sites, sites of historical or heritage significance have been identified. Notwithstanding this work, over time new sites may be identified. IGO has clear protocols around land disturbance and acts in accordance with the law. As required, IGO seeks to engage Traditional Owners to ensure the effective and culturally sensitive management of significant sites.

In FY2015 no significant sites were disturbed accidentally or otherwise.

## STATUTORY COMPLIANCE

IGO has a governance process for identifying statutory non-compliance as well as non-conformance with IGO policies and procedures. These improvements will see systematic audits to objectively verify conformance with our sustainability standards and legal requirements, as well as provide recommendations to improve our sustainability performance. Work continues to improve this process.

In FY2015 IGO received no fines or non-monetary sanctions.

In FY2015 IGO received five improvement notices from the Western Australian DMP's Resource Safety Branch. These required various modifications to our systems to further improve workforce safety. All corrective actions associated with these improvement notices are either complete for on target for completion by the due date.

In FY2015 IGO received no improvement notices in respect of environmental performance.

In FY2015, IGO's internal processes identified a range of minor non-compliances with our policies and procedures. While these are important to the effective management of our business at an operational level (and corrective actions are pursued to completion), none were regarded as material from the perspective of IGO as a whole, nor were any material to our external stakeholders beyond those addressed above.

## STAKEHOLDER FEEDBACK

In FY2015, IGO received feedback on our performance and public reporting. In FY2015 IGO received no material or re-occurring complaints from any of our stakeholders in respect of nuisance or harm that we were seen to have caused. However, of particular note was feedback received in respect of the absence of public reporting on nonfinancial matters.

In FY2016 IGO will introduce both a Community Policy and a more clearly defined process to enable stakeholder feedback.

## SAFETY CASE STUDY:

## SPRAIN AND STRAIN REDUCTION STRATEGY - COMPANY WIDE

In 2015, IGO commenced a functional analysis study to evaluate the musculoskeletal risks inherent in job roles that had over the years shown a trend in sprain and strain injuries.

The study targeted back and shoulder injuries, which have shown a trend in job roles that require repetitive lifting above shoulder height, lifting and twisting at waste height, and ascending and descending from heavy mobile equipment.

Our aim is to educate our workforce on the best practices that can be applied while carrying out these tasks and to explore alternative options.

IGO has also recognised that adequate physical assessment of personnel, prior to their employment, is crucial. Thus extra consideration is being taken to incorporate jobspecific musculoskeletal fitness assessments during preemployment medicals to ensure that all new personnel are able to meet the physical demands of their jobs.

By designing job specific pre-employment functional medical assessments and educating the workforce on best work practices, IGO hopes to reduce the frequency and length of strain and sprain type injuries.



By educating our workforce on best work practices and assessing the physical fitness of our workforce against the physical demands of their job responsibilities, we hope to further reduce workplace sprains and strains.



# **ENVIRONMENTAL IMPACT**

This section covers environmental aspects that are deemed to be of material significance to IGO's sustainability performance.

IGO identifies these material aspects on an ongoing basis by means of environmental monitoring, risk assessments, environmental reporting (both internal and external), and compliance review.



# Numerous

species and habitats of significance

## LAND AND BIODIVERSITY MANAGEMENT

During FY2015 there was no new land disturbance at the Long Operation.

During FY2015, within the area of the operating mine, Jaguar Operation carried out no new land disturbance but successfully completed 0.65 ha of progressive rehabilitation. IGO's exploration drill program in the areas around the Jaguar Operation resulted in the disturbance of 0.43 ha. Of this, 0.36 ha of the exploration-disturbed area has been rehabilitated.

As IGO's Stockman Operation is currently in the approvals stage, no land clearing has occurred.

IGO's regional exploration operations around Australia created a disturbance footprint of 190 ha. Generally, all land disturbance is rehabilitated within six months of the initial disturbance occurring.

During the 2014 calendar year, 384.5ha of land was cleared at the Tropicana Operation JV, primarily for the expansion of the waste rock dump, open pits, growth medium stockpiles, haul roads and marginal ore stockpiles. During the same period, an area of 7.72 ha was identified for rehabilitation and the majority of the planned earthworks were completed. This brings the site's total rehabilitated land area to 101 ha which constitutes 4.1% of Tropicana Operation JV's total disturbance footprint.

#### FLORA AND FAUNA

The land surrounding the Jaquar Operation is dominated by mulga woodlands and floristic associations typical of the regions ephemeral creek lines. The area surrounding the Long Operation is dominated by Eucalyptus woodlands and halophytic low shrub lands associated with the shores of Lake Lefroy. Both operations are subject to extreme temperatures and periodic rainfall as is common to the Goldfields region of Western Australia.

The areas within and surrounding both the Long and Jaguar operations has been subject to mining activities for over 35 years. This has resulted in clearing for the construction of infrastructure, waste dumps, tailings storage facilities (TSF), processing plants, open pits and underground mines. The proximity of Long Operation to the town of Kambalda and the historic public land use of the surrounding area has also contributed to the degradation of the local environment.

At the Jaguar Operation, in addition to the historic impact of past mining activities, the mining leases and surrounding pastoral properties have been impacted upon by both cattle grazing and a range of feral animals and introduced weeds. Of note are the large populations of introduced goats, dogs, cats and rabbits.

Field fauna survey data at the Jaguar Operations recorded 57 bird species, eight native and four introduced mammals, 23 reptiles and four amphibians. A desktop analysis of potential fauna distributions identified two mammal, one reptile and eight bird species of conservation significance that could be present in the area due to the presence of suitable habitat. However, a number of these species are now thought to be locally extinct as there have been no sightings since the early 1980s. Conversely, anecdotal evidence (increased sightings of breeding pairs) suggests there has been an increase in the population of birds of prey around Jaguar.

IGO seeks to understand its ongoing impact post-approval of its mining activity. IGO currently monitors its impacts on vegetation near to our mining operations by means of comparative photography at pre-defined photomonitoring survey points. Photos collected over the life of the Jaquar operation have shown no deterioration in plant health at the established monitoring points. In the coming two years IGO will complete general flora and fauna surveys to assess changes that may have occurred since the last set of surveys.

IGO monitors areas that been rehabilitated to assess the effectiveness of the works. Specifically, both erosion and floristic successional processes are monitored. Remedial action is taken as required.

Tropicana Operation JV is located on the western edge of the Great Victoria Desert, the region is dominated by sandplains, sand hills and sand dunes covered with Marble Gum (Eucalyptus gongylocarpa), Mallee (Eucalyptus youngiana) and Spinifex (Triodia basedowii).

The sand plain communities surrounding the Tropicana Operation JV have an extremely high small-vertebrate diversity with more species of terrestrial reptiles and mammals per hectare than anywhere else in Western Australia

Monitoring of vegetation condition and abundance is required on an annual basis at Tropicana in accordance with the mine's approval conditions. The results are reported in the Tropicana Operation JV annual environmental report. The 2014 survey found no decline in overall vegetation cover or condition.

Tropicana Operation JV also completes an extensive fauna monitoring program and supports regional fauna research. The program includes monitoring at both the site's six artificial water ponds and the TSF. The artificial water ponds were established to provide preferential water sources to the site's TSF in an effort to minimize the number of fauna deaths that could potentially occur given fauna's use the TSF's liquor as a water source. The liquor poses a hazard to fauna given that it contains low concentrations of a toxic processing reagent (weak acid dissociable cyanide).

As noted previously, a gas pipeline is being constructed from Murrin Murrin to Tropicana. This requires the excavation of a trench into which the gas pipeline is placed and then buried. Whilst sections of the trench are only open for a brief period, they act as a pit-fall trap for native fauna. To minimise the impact, the open sections of trench are checked daily and the animals that have been inadvertently captured are then released. Whilst the potential for negative impacts are real, the situation provides a notable opportunity to collect an extensive body of information on the regions fauna.

#### **ENVIRONMENTAL MANAGEMENT PLANS**

IGO uses site-specific Environmental Management Plans (EMPs) to define and direct environmental management activity. This includes environmental statutory compliance, the identification of environmental aspects and the monitoring of environmental impacts. Environmental performance is reported each year to the respective government departments in the operation-specific Annual Environmental Reports.

IGO's land and biodiversity management practices are compliant with the law and in line with that of other mining companies. However, we have both the capacity and intention to improve our performance – particular in the area of ongoing impact assessments on flora and fauna. IGO's impacts are limited and confined, and represent a tiny fraction of the cumulative impacts associated with the mining industry as assessed by all credible metrics.

#### WASTE MANAGEMENT

The two largest waste streams produced at IGO operations are waste rock and tailings. At the Jaguar Operation both are produced, whereas the Long Operation produces only waste rock. The waste rock is stored and managed in accordance with Department of Mines and Petroleum quidelines to minimise its potential to cause environmental impact and ensure the effective rehabilitation of our mine sites both progressively and at closure.

In FY2015, a total of 237,862 tonnes of waste rock was mined from Jaguar Operation's Bentley Mine. The majority of waste rock generated at the Bentley mine is stored before being crushed and processed in the Bentley CAF plant and then pumped underground. At present, it is predicted that all waste rock extracted from the Bentley underground mine will be placed back underground in the form of CAF prior to mine closure. As mining activities in the Jaquar underground mine have now ended, no waste rock has been removed in the reporting period. All waste rock removed in the past has been formed into the Jaquar waste rock dump, which has now been partly rehabilitated (5.40ha).

In FY2015, a total of 110,570 tonnes of waste rock was mined from the Long Operation. This is stored on a waste rock dump and will be rehabilitated at mine closure.

During the 2014 calendar year, Tropicana Operation JV produced 39.84 mega tonnes of waste rock.

At each of the sites, a small quantity of waste rock that is known to be non-acid forming is crushed for use as road base, bunding and other operational purposes.

Tailings produced at Jaguar Operation's Processing Plant are stored in a TSF to prevent discharge into the environment. At the Jaquar Operations in FY2015, a total of 2,479,978 wet tonnes of tailings was discharged into the active Tailings Storage Facility 2.

The Tropicana Operation JV has a single cell tailings storage facility where all tailings from the Tropicana processing plant are deposited. In 2014 calendar year, Tropicana deposited 13 mega tonnes of tailings into their storage facility.

All IGO tailings storage facilities undergo an annual audit to ensure that they are operated in accordance with the mine's operating strategy, safety conditions, prescribed premises conditions and mining tenement conditions

It is noteworthy that the Long Operation uses tailings from St Ive's Gold Mine to produce a paste backfill material that is used to re-fill mined underground voids. In FY2015, Long Operation used 63,711 dry tonnes of tailings to produce 86,424 tonnes of paste.

#### WATER MANAGEMENT

Water is a key consideration in IGO's mining activities. Water is used in exploration drilling, in the mining process, in ore processing, in our camps, for dust suppression and many other uses. Water is variously extracted from underground mines and dedicated borefields. The uncontrolled release of water and process solutions can have unintended safety and environmental impacts. Consequently, the management of water is central to the sustainability of our operations.

#### JAGUAR OPERATION

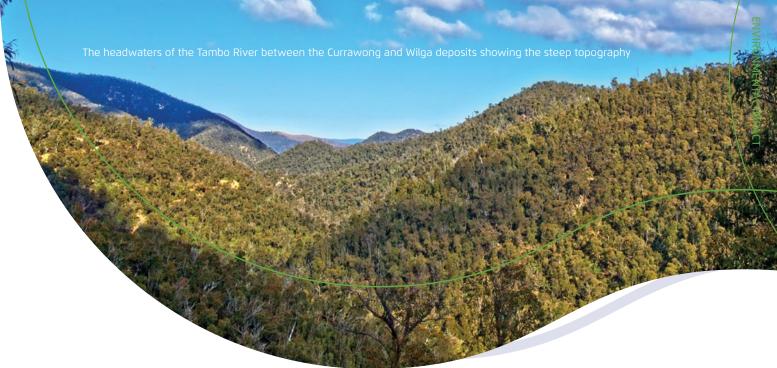
The Jaguar Operation is situated in a remote area and extracts all its required water from groundwater sources. Groundwater naturally seeps into our underground mines. The water is extracted from the mines to prevent them from flooding. Our water needs are supplemented by production bores situated throughout the mining

All groundwater abstraction is controlled under a groundwater licence issued by the Department of Water. The licence defines a maximum abstraction volume from varying sources around the site. A series of flow meters have been installed to accurately measure the volume of water used. This ensures we operate within our licence limits. The standing water level (SWLs) of each of the production bores and surrounding pastoral bores are periodically measured to assess the degree to which the underlying aguifers is affected. Of particular importance is Jaquar Operation's effect on the water table and water quality within the surrounding pastoral leases. Groundwater monitoring to date has found water levels are dropping in accord with the modelled outcomes. However, albeit that water levels in some pastoral bores have dropped, it has not been to an extent that will have a detrimental impact on the pastoral lease.

IGO also carries out water chemistry analysis on samples taken on a quarterly basis at all production bores, pastoral bores and underground water reservoirs. The monitoring provides clear insight into the impacts of our activities on the areas groundwater chemistry. Monitoring to date has demonstrated that our activities have not caused any material changes to water chemistry beyond that predicted.

Communications with pastoralists has confirmed that they have experienced no adverse outcomes on their properties.

All volumes, SWLs and chemistry results are reported in an annual groundwater monitoring summary report, produced by a specialist hydrogeologist, and then submitted to the Department of Water for review. This report highlights any issues or environmental impacts abstraction may be causing. This year's report found no specific concerns relating to groundwater abstraction.



## CASE STUDY:

#### WATER USE EFFICIENCY

The proposed Stockman Project is located in the high alpine region of East Gippsland, Victoria, within the State Forest area and with tenements bordering the National Park. The project area contains steep topography ranging in elevation from 600–1,200 metres above sea level. It straddles a surface water divide that includes the headwaters of the Tambo River, which flows south to the ecologically important Gippsland Lakes on the south coast, and part of the Goulbourn-Murray system to the north-east, which has significant ecological, urban water supply and farmland irrigation values. It is therefore critical that the project be operated to minimise water use, and to protect ecological values of the catchments in which it is located.

Because of the location high in the watersheds, establishing large dedicated project water supply dams is neither practical nor likely to be approved under Victorian law. The very low permeability or 'hydrogeologically-tight' ground at site means that reliable groundwater supplies are unlikely to be present. Therefore, during development of the project, a number of other water supply options were examined including extraction from:

- distant rivers
- distant commercial water supply dams
- dedicated offsite borefields (which would need to be developed).

In conjunction with this work, close attention was also paid to minimising water use by the project, and to capturing and reusing as much process water as possible – given that 80% or more of water use is for ore crushing and processing, discharged in tailings disposal, and is potentially recoverable.

Detailed water balance modelling was carried out during the project design work. This aimed at closely defining the differing site water quantity and quality requirements, and how they could be could be best met, while also meeting project environmental management objectives. This work demonstrated that almost all of the project's water supply requirements and environmental management targets could be met by:

- storing rain falling directly on the project's processing plant site (runoff from which potentially could be contaminated from plant operations),
- storing rain falling on the proposed tailings dam pond and immediate surrounds (which would mix with recycled process water)
- storing water sourced from other small onsite sources
- incorporating various levels of water treatment
- maximising recycling of tailings water. That is, the early estimate of 'offsite' water requirements (i.e. sources from distant rivers, borefields etc.) of some 350 MLpa could be reduced to almost nil.

As the main inputs to the site water balance model are rainfall, which varies year-to-year, as well as within longer time horizon patterns and trends, the modelling was probabilistic i.e. it used statistical records to predict the probability of a certain rainfall occurring in a particular year. The output from many model 'runs' established confidence levels of a particular outcome, such as water available from the onsite sources in the median, or most likely, year (50th percentile of the output values). This allowed testing of the difference between median and wet and dry years, and the planning implications for those years.

Overall, the modelling results showed that, with a modest increase in site storage capacity, natural fluctuations in input could be mitigated and the construction of significant external 'redundancy' infrastructure could be avoided.

This outcome had a triple bottom line benefit:

- environmental no clearing of vegetation for construction plus reduced energy use for pumping
- social no groundwater water use in potential competition with other users
- economic no expensive infrastructure "insurance" construction that may never be needed.



Long Operation's water abstraction is also controlled under a groundwater licence. Water extracted from the mine is used primarily for dust suppression and underground mining purposes. Excess water is pumped to the surface, held in settling dams to remove sediment, and then discharged onto Lake Lefroy. Water use and discharge volumes are accurately measured using a series of flow meters throughout the site to ensure authorised water abstraction entitlements are not breached.

SWL and water chemistry monitoring is periodically carried out and the data is submitted in an annual groundwater monitoring summary to the Department of Water. The Department of Water reviews the report and provides any feedback to IGO. No concerns were identified by IGO nor were any raised by the raised Department of Water this financial year.



A WA School of Mines graduate (BSc Mine and Engineering Surveying) with four years' industry experience. Kiki began her full-time career as an underground Surveyor at IGO's Long Operation. Her responsibilities include surveying all underground development work and production headings, control network surveys, data base management, direction and grade mark-ups of headings.

"My job gets me out of my office and keeps me physically fit, loving it!!'

Kiki Huang Underground Mine Surveyor Long Operation

toxic to plants. Pipelines that contain hypersaline water must be properly bunded and inspected to ensure no significant spills occur. A relatively small percentage of the groundwater is incidentally extracted as water vapour and mist from underground to the surface by the mines ventilation fans. The hypersaline water vapour emitted from the vent fans has and continues to pose a threat to surrounding vegetation. During a DER compliance inspection carried out on the 16th June 2015 (i.e. outside the FY2014/15 reporting period), it was identified that hypersaline water run-off and vapour from the Long South vent fan was passing into the environment and causing vegetation stress and death. The DER placed an improvement notice upon Long Operation to fix this issue and prevent further vegetation deaths. Long Operation are currently designing a solution to minimise the volume of hypersaline water emitted.

#### TROPICANA JV

Tropicana Operation JV has four groundwater licences permitting abstraction of groundwater in the area. This is managed in accordance with an operating strategy approved by the Department of Water. During the 2014 calendar year, a total of 4.9 million kL of water was abstracted from operational bores and the process water supply borefield. The water is used for processing, road maintenance and dust suppression. A series of flow meters are installed to accurately monitor water use, all pipelines are bunded to prevent spills passing into the environment.

Groundwater monitoring programs are in place to measure the effect (if any) that abstraction is having on the surrounding water table (level and chemistry). During 2014 calendar year, the standing water levels were variable but remained stable, although there were some exceptions which saw significant decreases in standing water level likely due to increased abstraction rates. No significant change in water quality was observed.

Surface water monitoring is also undertaken at Tropicana to determine the effectiveness of the sites surface water management infrastructure following significant rain events. The tests results indicated that surface water management onsite was effective.



#### **ENERGY CONSUMPTION**

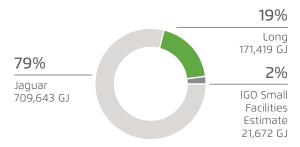
Across all IGO managed operations, a total of 902,733 GJ of energy was consumed in FY2015 and 152,397 GJ of energy was produced. During the 2014 financial year, IGO consumed 948,071 GJ, this is a 5% reduction in energy consumption since last year.

Energy consumption at IGO occurs primarily at the two active operations, Jaquar and Long. Jaquar has two main areas of energy consumption diesel (for all vehicles and machinery on site. At Long Operation, the energy consumption areas are diesel (for the mining fleet) and electricity use, which is taken from the grid. Explorations have a low amount of energy use, with only diesel use in vehicles and drill rigs.

The Long Operation consumed a total of 171,419 GJ in FY2015. The Jaguar Operation consumed a total of 709,643 GJ in FY2015 and IGOs small facilities consumed a total of 21,672 GJ. The figure below shows the percentage contribution of each identified 'facility' to the total amount of energy consumed.

#### FIGURE 16

% OF TOTAL GJ USED AT EACH OPERATION AND AT IGOS SMALL FACILITIES



#### GREENHOUSE GAS EMISSIONS

Greenhouse Gas Emissions (GHG) emissions and resulting global climate change is considered one of the most important issues in global environmental management. Whilst IGO's emissions are all but trivial in comparison to other mining and industrial emitters, we understand that we have a part to play. The total of Scope 1 and Scope 2 GHG emissions for all IGO facilities for 2015 was 53,957 tonnes (CO2-e). The main source of GHG for IGO is the consumption of fuel at Jaguar and Long. Both sites have taken steps to reduce GHG emissions. Jaquar Operation installed a CNG-fuelled power plant to reduce diesel consumption and Long Operation is using 5% biodiesel blend for its mining fleet. This has resulted in a 4% reduction in greenhouse gas emissions which is equal to 2,229 tonnes (CO2-e) since last financial year.

The figure below shows the breakdown of IGOs total greenhouse gas emissions into the percentage of Scope 1 and Scope 2. To clarify, Scope 1 emissions are direct emissions produced directly from sources that are owned by IGO (e.g. fossil fuels burned on-site and in company owned vehicles). Scope 2 emissions are indirect emissions produced by the generation of electricity off-site and purchased by the company.

#### FIGURE 17

% BREAKDOWN IGOS TOTAL GHG EMISSIONS (SCOPE 1 AND SCOPE 2)



# GREENHOUSE GAS EMISSIONS

IGO's GHG emissions are reported to the Clean Energy Regulator under Section 19 of the National Greenhouse and Energy Reporting Act 2007 (NGER Act). In summary our emissions in FY2015 were:

	Carbon Dioxide (CO <sub>2</sub> -e tonnes)
Long Scope 1	4,709
Long Scope 2	17,105
Long Total	21,814
Jaguar Scope 1	30,466
Jaguar Scope 2	0
Jaguar Total	30,466
IGOs Small Facilities Scope 1	1,433
IGOs Small Facilities Scope 2	244
IGO Small Facilities Total	1,677
IGO Total Scope 1	36,608
IGO Total Scope 2	17,349
IGO Total	53,957

IGO's GHG emissions are reported to the Clean Energy Regulator



## OTHER SIGNIFICANT EMISSIONS

IGO completes annual National Pollutant Inventory (NPI) reporting in accord with Australian law. The NPI is used to track pollution across Australia, and to ensure that the community has access to information about the emission and transfer of toxic substances which may affect them locally. The NPI contains data on 93 substances that have been identified as important due to their possible effect on human health and the environment.

In FY2015, IGO key NPI reportable pollutants were

Carbon monoxide	kg
Jaguar - Air Total	44,085
Long - Air Total	13,224
IGO Total	57,309
Oxides of nitrogen	
Jaguar - Air Total	104,264
Long - Air Total	37,544
IGO Total	141,808
Sulphur dioxide	
Jaguar - Air Total	111
Long - Air Total	31.5
IGO Total	142.5
Volatile organic compounds	
Jaguar - Air Total	5,354
Long - Air Total	2,937
IGO Total	8,291
Particulate matter (<10um)	
Jaguar - Air Total	245,579
Long - Air Total	147,693
IGO Total	393,272
Particulate matter (<2.5um)	
Jaguar - Air Total	5,113
Long - Air Total	2,544
IGO Total	7,657

For further information, refer to the NPI website (www. npi.gov.au).

## MINE CLOSURE PLANNING

Closure planning is a complex process. The planning horizon is typically measured in decades. Planning for mine closure has social, economic and environmental parameters that generally change over the life of a mine. The difficulties associated with mine closure are often the product of poor initial planning. Consequently closure planning is a matter for consideration during all stages of operation, and particularly, during a project's feasibility phase. Mindful of this, and in conformance with Western Australian law, IGO has Mine Closure Plans' for both its Jaguar and Long Operations. These were developed in accordance with the 'Guidelines for Preparing Mine Closure Plans (June 2011) (www.dmp.wa.gov.au/documents/ Mine Closure(2).pdf) and approved by the Government of Western Australia's Department of Mines and Petroleum (DMP). Similarly, the Tropicana Operations JV has submitted a conceptual mine closure and rehabilitation strategy.

In May 2015, the DMP issued an updated set of guidelines (www.dmp.wa.gov.au/documents/Mine Closure (2). pdf). In response, IGO will commence a review of its mine closure plans in FY2016. Further, given IGO's intention to grow its business, and given the likelihood that it may expand into new jurisdictions, IGO will also work to ensure closure plans conform with the ICMM Planning for Integrated Mine Closure: Toolkit (www.icmm.com/document/310).

The potential impacts of closure are an ongoing consideration in IGO's engagement with governments and local communities. Potential impacts of closure are also considered in regard to our support of community development initiatives and local business.

Provisions are made for the estimated cost of rehabilitation, decommissioning and restoration relating to areas disturbed during the mine's operation.

Mine	Estimated Cost of Closure
Tropicana JV	\$60,069,861
Long Operation	\$1,081,700
Jaguar Operation	\$10,295,440

At present IGO's mine closure plans are not subject to independent audits nor are they readily publicly available. Once complete, IGO will arrange for them to be audited and made publicly available.

As a social good, IGO, like many other mining companies, pays a Mining Rehabilitation Fund (MRF) Levy to the Government of Western Australia (www.dmp.wa.gov. au/19344.aspx). It is the State's position that money in the fund will be available to rehabilitate abandoned mines across Western Australia. Interest earned on fund contributions will be available to spend on rehabilitating legacy abandoned mines. In FY2015, IGO's levy payments totalled \$121,503.72



## MATERIALS STEWARDSHIP

In line with our environmental policy, IGO supports the concept of materials stewardship. Materials stewardship is an integrated strategy aimed at ensuring that all material, processes, and products associated with our business are produced, consumed and disposed of in an economically, socially and environmentally responsible manner. Materials stewardship is generally seen to have three components: Resource stewardship, Process stewardship and Product stewardship.

Resource stewardship is the process of maximising the benefits derived from the resource over its entire lifetime while minimising or mitigating the resultant negative impacts. The obvious focus of resource stewardship in the mining context is ore recovery and the avoidance of activities that will likely result in the 'sterilisation' of ore (i.e. doing something that is likely to permanently render an ore source as sub-economic to mine). However, resource stewardship extends over a wide range of materials including the natural resources on the lands surrounding and controlled by mining companies, the topsoil and biomass cleared from a site prior to the commencement of mining, the management of the waste rock extracted during mining, and the management of other wastes including tailings. Resource stewardship is central to IGO's day-to-day environmental management.

Process stewardship is the set of activities required to ensure that we maintain effective control over our mining-related activities to maximise socio-economic benefits while minimising or mitigating the negative impacts. Process stewardship specifically includes the way in which we manage process inputs such as water, power and other process consumables.

Product stewardship is the process by which the producer controls or seeks to influence how their product is used and ultimately disposed of. For mining companies like IGO, Resource stewardship and Process stewardship are directly within our control. In the case of Product stewardship (as is true for most producers of gold, nickel and copper, zinc and silver), while we have some control determining who the initial buyers of our products are, we effectively have no control over the materials once they enter the myriad of global manufacturing supply chains.



## IGO IMPACTS IN THE WIDER CONTEXT

IGO has total or part ownership of three operating mines, all of which are located in Western Australia. While IGO's socio-economic contribution and environmental impacts are not trivial, it is noteworthy that Western Australia has approximately 1,055 mining operating sites (open pit, underground mines and quarries) and 169 mineral processing plants (www.dmp.wa.gov. au). Western Australia is one of the most productive and diversified mineral regions in the world with more than 50 minerals being produced in commercial quantities. Consequently the socio-economic contribution and environmental impacts of the industry as a whole is material both in a state and a national context.

## **GRI CONTENT INDEX**

To aid the cross-reference of IGO's material issues as identified in this report to the Global Reporting Initiative reporting guidelines, the reader is referred to the following table.

## GENERAL STANDARD DISCLOSURES

General Standard Disclosures Page Number (or Link)

The table below crossreferences the general standard disclosure requirements of the GRI reporting guideline with the contents of this report.

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# IGO PARAMETERS

Parameter	Value	Unit
Independence Group		
Size of IGO Workforce	434	count
Inputs		
Labour	148,924	hours
Ore Mined (FY2015)	743,935	tonnes
Waste Mined	237,862	tonnes
Electricity	28,690,897	KWhrs
Gas	478,929	gigajoules
Ground Support	1,074	tonnes
Explosives	803	tonnes
Cement	7,214	tonnes
Reagents - Grinding Media	664	tonnes
Water	2,125,294	kL
Reagents - Copper Sulphate	469	tonnes
Lubricants & Oils	198,847	litres
Emissions		
IGO Carbon dioxide (Scope 1 and Scope 2)	53,957	CO2-e tonnes
IGO Scope 1 Emissions	36,608	CO2-e tonnes
IGO Scope 2 Emissions	17,349	CO2-e tonnes
Carbon monooxide	64,001	kg
Oxides of Nitrogen	154,012	kg
Sulfur dioxide	169	kg
Volatile Organic Compounds	7,563	kg
Particulate matter (<10um)	399,722	kg
Particulate matter (<2um)	7,299	kg
Products		
Ni in Ore Delivered	10,198	tonnes
Cu in Ore Delivered	723	tonnes
Cu in Concentrate	7,390	tonnes
Zn in Concentrate	44,999	tonnes
Ag in Concentrate	1,876,384	ounces
Au in Concentrate	4,439	ounces
Au	148,924	ounces

# IGO PARAMETERS

Parameter	Value	Unit
Rehabilitation		
Newly rehabilitation	1	hectare
,		THE CLOT C
Tailings (wet toppes) to	2 470 070	toppos
Tailings (wet tonnes) to TSF 2 (Jaguar)	2,479,978	tonnes
Waste Rock	348,432	tonnes
Materials to Landfill	720	tonnes
Anglogold Ashanti - Tropi	cana JV	
Life of Mine	8	years
Tropicana Tenement	9,000	square
Area		kilometres
Total Cleared Area	2,451	hectares
Ore Mined	8	Megatonnes
Waste Mined	39.84	Megatonnes
Au ICOs Cold Chara	510,967	ounces
IGOs Gold Share	153,290	OUNCES
Tropicana Tailings to TSF (2014 calendar year)	13	Megatonnes
Consumables		
Water Abstraction from process water bores	4,362,473	kL
Water Abstraction from operational bores	532,488	kL
Long Operation		
Life of Mine	2.5	years
Long Tenement Area	1,381	square kilometres
Total Cleared Area	76.5	hectares
Ore Production since 2002	2	megatonnes
% FIFO workforce	13	%
Ore Mined (FY2015)	258,634	tonnes
Waste Mined	110,570	tonnes
Consumables		
Dewatering Volume to Surface	288.5	Megalitres
Water Discharge to Lake Lefroy	253.9	Megalitres
Jaguar Operation		
Life of Mine	2.5	years
Jaguar Tenement Area	395.4	square kilometres
Total Cleared Area	342	hectares
Jaguar Ore Process Rate	450-480	kilotonnes per annum
Waste Mined (FY2015)	237,862	tonnes
Ore Mined (FY2015)	485,302	tonnes
Zn Concentrate	93,093	tonnes
Cu Concentrate	28,936	tonnes

# IGO PARAMETERS

Parameter	Value	Unit
Consumables		
Underground dewatering	1,100	Megalitres per annum
Water discharged into Teutonic Bore Pit	425	Megalitres per annum
Economic Impact		
Value of IGOs Products	\$491 million	AUD
IGO Exploration Expenditure	\$37.7 million	AUD
IGO Gold Sales (FY2014)	\$147 million	AUD
IGO Gold Sales (FY2015)	\$228 million	AUD
IGO Nickel Sales (FY2014)	\$117 million	AUD
IGO Nickel Sales (FY2015)	\$105 million	AUD
Financial Performance		
Revenue Increase	25%	
EBITDA Increase	44%	
Net Profit After Tax	\$77 million	AUD
Net cash, cash equivalents and debt	\$120 million	AUD
Total fully franked dividends paid in FY2015	11 cents per share	
Final Dividend pool	\$10.5 million	AUD
Socio-Economic Contrib	utions	
Salaries (excluding Tropicana JV)	\$60.9 million	AUD
Tax & State Royalties (including IGO's part of Tropicana JV)	\$19.2 million	AUD
Corporate Giving	\$0.21 million	AUD
IGO Royalty Payments (FY2015)	\$16 million	AUD
IGO's Community Development Projects spending	214,000	AUD
IGO spending on top 10 consumables	\$33 million	AUD
Social Impact		
Material Issues	44	count
Corporate Staff	46	count
Exploration Staff	45	count
Jaguar Operation Staff	217	count
Long Operation Staff	126	count
Number of IGO Staff	366	count
Number of Contractors	68	count
Graduates inducted in FY2015	4	count
Students inducted in FY2015	10	count
Apprentices inducted in FY2015	4	count

# IGO PARAMETERS

Parameter	Value	Unit
IGO spending on local indigenous contractor (Bundarra Contracting)	\$2.2 million	AUD
Safety		
IGO employees hours worked	1,008,390	hours
No. of injuries at IGO (including Tropicana)	280	count
No. of injuries requiring medical treatment	11	count
LTI days	6	count
RDI-related days	6	count
IGO workers compensation claims		
Transport		
Jaguar Operation - No. trucks received per year	78	count
Long Operation - No. trucks received per year	260	count
Tropicana JV - No. of trucks/vehicles per month (one way)	80-170	count
Statutory Compliance		
DMP Improvement Notices Received	5	
Land and Biodiversity	Management	
Jaguar Land Disturbance (FY2015)	0.65	hectares
Jaguar Exploration Disturbance (FY2015)	0.43	hectares
Jaguar Exploration Rehabilitation (FY 2015)	0.36	hectares
Tropicana JV Land Clearing (2014 calendar year)	384.50	hectares
Tropicana JV Land Identified for Rehabilitation (2014 calendar year)	7.72	hectares
Tropicana JV total rehabilitated land area	101.00	hectares
Energy Consumption		
Jaguar Operations	709,643	GJ
Long Operation	171,419	GJ
IGO Small Facilities	21,672	GJ



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